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# The spider family Toxopidae (Araneae)

by

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The family Toxopidae was established by Hickman in 1940 for a small spider *Toxops montanus* Hickman 1940, found on the summit of Mt Wellington, Tasmania. Hickman pointed out in this paper that the spider possessed characters found in several widely separated families but could not be placed satisfactorily in any one of them. Up till now the family Toxopidae has remained based on this single species. In the present paper four further genera and twenty-six species are brought into the family and the majority of the family characteristics suggested by Hickman are confirmed. Three of the genera, *Cycloctenus*, *Plectophanes* and *Laestrygones*, have been known for many years but because of their anomalous characters have been placed in an extraordinary range of families. *Cycloctenus* L. Koch (1878) was originally placed by Koch in the Ctenidae, but subsequent authors have considered the genus better situated in the Lycosidae. *Plectophanes* Bryant (1935) was originally described as a genus in the Sicariidae. *Laestrygones* Urquhart (1893) was placed by Urquhart in the Oxyopidae although he described the same species subsequently (Urquhart, 1885) as a species of *Lycosa*. The presence of an unusual spined plate in front of the spinnerets of this species led Hogg (1909) to consider the spider cribellate and he described it as a new species of *Stiphidion* Simon (1902), a genus belonging to the family Psechridae. The present author (Forster, 1955), revising Hogg's species, realised that the spider was not cribellate, and also that it should be placed in *Laestrygones*, but followed Bryant (1933) in placing the genus in the family Perissoblemmidae.

The Toxopids are hunting spiders which do not appear to make webs. Most of the species have been found in forest or shrubland although a few have been found in subalpine regions, and the range of *Laestrygones* includes Campbell Island. Where recorded the eggsacs have proved to be flattened and are usually fastened to some convenient surface. The eggsacs of *Cycloctenus* are smooth and lenticular, and are usually found fastened to the under-surface of stones or logs in areas where the spiders live. A similar type of eggsac has been found associated with several species of *Toxopsiella*. The distribution of the family Toxopidae, as we now know it, is Australia and New Zealand. Taking into consideration the typical southern continent distribution pattern of the New Zealand-Australian element to which this family belongs, the family could well be recorded subsequently from the southern regions of South Africa and South America. *Galliena montigena* Simon (1898) from Java, and considered by Simon to be related to *Cycloctenus*, may represent a tropical northern extension of the family.

## FAMILY TOXOPIDAE HICKMAN, 1940

1940. HICKMAN, *Pap.Proc.R.Soc.Tasmania*, p, 125.

Cribellum and calamistrum lacking. Colulus present, six spinnerets, anterior pair larger than the others. Chelicera with a scopula and lateral condyle. Both margins toothed. Labium free. Maxillae slightly converging and furnished with a scopula. Trochanters not notched. A pretarsus usually present. Three tarsal claws. Upper claws pectinate in a single row. Legs without scopulae. Spurious claws wanting. Trichobothria in two rows on tibiae and on metatarsus and tarsus. Integument with barbed hair. Eight eyes, when viewed from above form a recurved row. Posterior eyes very large. One pair of booklungs in normal position. A single tracheal spiracle close to the spinnerets. Tracheal system extending into the cephalothorax and appendages. Pedipalp of female with straight claws.

Type genus *Toxops* Hickman 1940.

### *Toxops* Hickman, 1940

1940. HICKMAN, *Toxops*, *Pap.Proc.R.Soc.Tasmania*, p. 125.

The genus *Toxops* is separated from the four genera placed in the family in the present paper by possessing a conical and a bicusped tooth on the promargin of the chelicera and three teeth on the retromargin; a smooth tarsal claw in the female pedipalp and the presence of tenent hairs on the tarsi of the legs.

Type species *Toxops montanus* Hickman, 1940. By Monotypy.

### **Toxopsiella** n.gen.

Medium to small sized laterigrade toxopid spiders. Carapace low. Posterior eyes large, much larger than anterior eyes. Clypeus narrow. Chelicerae with prominent lateral boss, two teeth on both pro- and retromargins. Labium longer than wide. Sternum shield shape, approximately as long as wide terminating between coxae IV. Legs with spines on femora, tibiae and metatarsi, none on tarsi. Superior claws pectinate, similar; inferior claw pectinate. Pretarsus present, pulvillus lacking. Tarsal organ present. Claw of pedipalp of female pectinate.

Type species *Toxopsiella lawrencei* n.sp.

*Toxopsiella* is rather similar in appearance to *Toxops* but is separated from it by the different number of teeth on the chelicerae and the absence of a tarsal pulvillus. The structure of the male palp and female epigynum are also very different from those of *Toxopsiella*.

## **Toxopsiella lawrencei** n.sp.

♀

*Measurements* in millimetres.
Total length 5.60.
Cephalothorax: Length 2·88, Width 1·98.
Abdomen: Length 2·70, Width 1·71.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 1.71 | 0.90 | 1.44 | 1.17 | 0.63 | 5.85 |
| 2 | 1.62 | 0.81 | 1.08 | 1.08 | 0.63 | 5.42 |
| 3 | 1.53 | 0.81 | 1.07 | 1.44 | 0.56 | 5.41 |
| 4 | 1.98 | 0.90 | 1.62 | 2.23 | 0.90 | 7.65 |
| Pedipalp | 0.81 | 0.36 | 0.54 |  | 0.81 | 2.52 |

*Colour.*—Carapace dark brown with a pale band along each sublateral margin and a pale area behind the eyes extending back as a narrower band to the posterior margin. Abdomen dark, mottled with dark and pale brown.

*Carapace.*—Longer than wide in ratio of 16.11. The thoracic groove is barely discernable. Fovea distinct, longitudinal.

*Eyes.*—Ratio AME.ALE.PME.PLE=4.5.21.12. PME are placed on a low tubercle not much wider than the width of the two eyes. AME separated from each other and from the PME by 6/4 of the diameter of an AME. ALE separated from each other by 21/4 and the PLE by 61/4 of the diameter of an AME. The ocular quadrangle formed by the posterior eyes is twice as wide behind as in front and the depth is equal to the width in front. Height of clypeus equal to three times the width of an AME.

*Chelicerae.*—Vertical, two strong teeth present on both pro- and retromargins.

*Legs.*—4.1.2.3. Ventral surfaces of tibiae and metatarsi with 4 pairs of stout spines. Tibiae of legs 3 and 4 with two pairs of spines on both dorsal and ventral surfaces, metatarsi with three pairs on dorsal and ventral surfaces. Trichobothria present on tibiae, metatarsi and tarsi of all legs. *First leg:* Tibiae 2.2.2. proximal, Metatarsus 1.1.1., proximal 1 subdistal, Tarsus 1 at one third, 1 at two thirds. *Second leg:* Tibia 2.2.2. proximal, Metatarsus 1.1.1.1. proximal, Tarsus 1.1.1.1. proximal. *Third leg:* Tibia 2.2.2.1.1., Metatarsus 1.1.1.1., Tarsus 1.1.1.1. *Fourth leg:* Tibia 2.2.2.1.1., Metatarsus 1.1.1.1.1., Tarsus 1.1.1. The claws are carried on a distinct pretarsus. Superior claws similar, each with a single row of 7 strong teeth. Inferior claw with a single basal tooth. A distinct tarsal organ is situated at approximately two thirds of the length of each tarsus.

*Palpi.*—Spines are present on femora, tibiae and tarsi, Trichobothria: Tibia 1.1.1., Tarsus 1.1.1.1. on the proximal half. Tarsal organ not observed. Tarsal claw straight, with 6 strong teeth.

*Abdomen.*—Longer than wide in ratio of 3.2 clothed with short barbed setae. Colulus small.

*Epigynum.*—The appearance of the epigynum is shown in fig. 3. There are two ovoid spermathecae (fig. 4).

♂

*Measurements* in millimetres.
Total length 5·69.
Cephalothorax: Length 3·15, Width 2·07.
Abdomen: Length, 2·52, Width 1·62.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 2.34 | 0.99 | 2.16 | 2.16 | 0.90 | 8.55 |
| 2 | 1.89 | 0.90 | 1.53 | 1.62 | 0.72 | 6.66 |
| 3 | 1.80 | 0.81 | 1.17 | 1.71 | .072 | 6.21 |
| 4 | 2.34 | 0.90 | 1.71 | 2.34 | 0.98 | 8.36 |

The abdomen is paler than that of the female but otherwise similar in appearance. The general characters are similar to the female and only the following features need be described.

*Legs.*—1.4.2.3. Much longer than female. Spines as in female. Trichobothria distributed as follows: *First leg:* Tibia 0, Metatarsus 1.1.1., Tarsus 1.1.1. *Second leg:* Tibia 0, Metatarsus 1.1.1.1.1., Tarsus 1.1.1.1. *Third leg:* Tibia 2.2.2.1.1., Metatarsus 1.1.1.1.1. *Fourth leg:* Tibia 2.2.2.1.1., Metatarsus 1.1.1.1., Tarsus 1 median. Claws as in female.

*Palpi.*—The right palp is shown in figs 1, 2. Tibia with a single distal retrolateral process, broad at the base but spinous distally. The conductor is forked distally. The embolus is relatively short with the distal portion resting in the base of this fork.

*Types.*—Holotype female, allotype male Orepuki, Southland, under logs, 9 May, 1949, R. R. Forster. Holotype, allotype, Otago Museum. Paratypes Canterbury Museum.

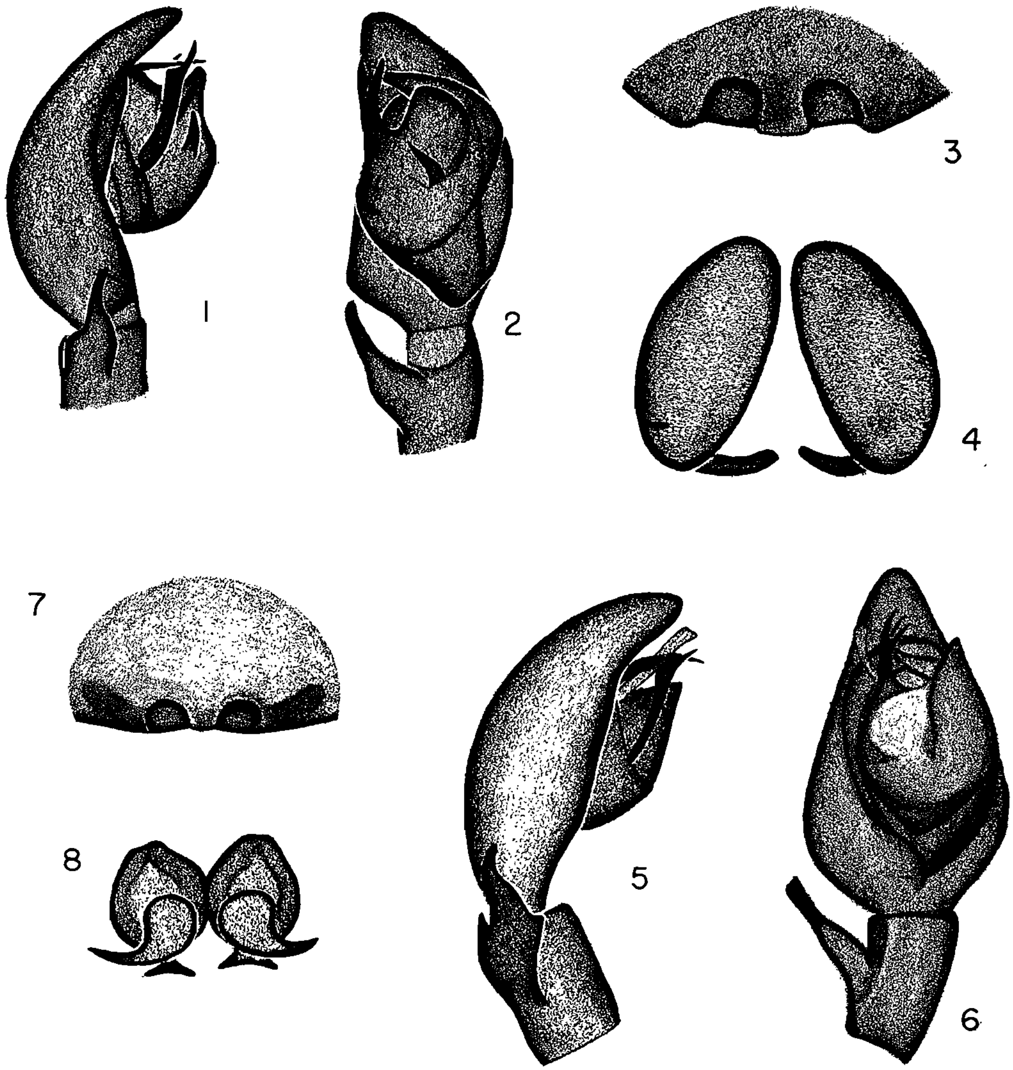
*Remarks.*—Found under logs in and near forest on low hills above Orepuki. This species is named for Dr R. F. Lawrence in recognition of his outstanding work on the Arachnids of South Africa and his extensive contributions to our knowledge of the cryptozoic forest fauna in general.

### **Toxopsiella medialis** n.sp.

♀

*Measurements* in millimeters.
Total length: 6·78.
Cephalothorax: Length 2·97, Width 1·80.
Abdomen: Length 3·78, Width 2·97.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 1.80 | 0.81 | 1.53 | 1.26 | 0.72 | 6.12 |
| 1 | 1.80 | 0.81 | 1.53 | 1.26 | 0.72 | 6.12 |
| 2 | 1.62 | 0.81 | 1.08 | 1.26 | 0.63 | 5.40 |
| 3 | 1.62 | 0.72 | 0.99 | 1.44 | 0.61 | 5.38 |
| 4 | 2.07 | 0.76 | 1.71 | 2.34 | 0.90 | 7.78 |
| Palp | 0.90 | 0.36 | 0.45 |  | 0.90 | 2.61 |



Figs. 1—4. *Toxopsiella lawrencei* n.sp. Figs. 1, 2 male palp. Fig. 3 Epigynum. Fig. 4 Internal genitalia. Figs. 5—8 *Toxopsiella medialis* n.sp. Figs. 5, 6 male palp. Fig. 7 Epigynum. Fig. 8 Internal genitalia.

*Colour*.—Similar in appearance to *T. lawrencei* with pale submarginal and median bands on the cephalothorax and a brown abdomen.

*Carapace*.—Longer than wide in ratio of 17.10. Narrower in the eye region. Fovea distinct, longitudinal.

*Eyes*.—Ratio of AME.ALE.PME.PLE=4.5.20.13. The AME are separated from each other by twice the diameter of an AME and from the PME by 6/4 times this width. The ALE are separated from the PME and the PLE by distances equal to respectively 4/4 and 13/4 of the diameter of an AME. The PME are separated from each other and from the PLE by a distance equal to 15/4 of the diameter of an AME, while the PME are separated from each other by 53/4 of this diameter. The quadrangle formed by the posterior eyes is wider behind than in front in the ratio of 19.14 and wider in front than long in ratio of 14.12. Clypeus narrow, height slightly less than the diameter of an AME.

*Chelicerae.*—Stout, vertical with two strong teeth on both pro- and retromargins.

*Labium.*—As wide as long, anterior margin slightly indented.

*Sternum.*—Shield shape, longer than wide in ratio of 5.4.

*Legs.*—4.1.2.3. The arrangement of spines similar to *T. lawrencei.* Trichobothria distributed as follows: *First and Second legs:* Tibia 2.2.2.2.1.1., Metatarsus 1.1.1.1.1., Tarsus 1.1.1.1. *Third leg:* Tibia 2.2.2., Metatarsus 1.1.1.1.1., Tarsus 1.1.1. *Fourth leg:* Tibia 2.2.2.2.1.1., Metatarsus 1.1.1.1.1.1., Tarsus 1.1.1. Superior claws similar, with 8 strong teeth. Inferior claw with a single basal tooth. Tarsal organ prominent, situated at approximately two thirds of the length of each tarsal segment.

*Palp.*—Spines on all segments. Tibia with a single row of four trichobothria, tarsus one on the median surface. Claw with seven strong teeth. Tarsal organ not seen.

*Abdomen.*—Clothed with short hairs. Colulus distinct. Epigynum as shown in fig. 7 similar in form to *T. lawrencei.* The internal genitalia consists of two pairs of small ovoid spermathecae (fig. 8).

♂

*Measurements* in millimetres.
Total length: 5·80.
Cephalothorax: Length 2·81, Width 1·73.
Abdomen: Length 2·98, Width 1·96.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 2 16 | 0.79 | 2.06 | 1.63 | 0.86 | 7.80 |
| 2 | 1.68 | 0.79 | 1.73 | 1.32 | 0.66 | 6.18 |
| 3 | 1.62 | 0.71 | 1.11 | 1.51 | 0.61 | 5.56 |
| 4 | 2.08 | 0.72 | 1.86 | 1.84 | 0.86 | 7.36 |

The characters of the male differ little from the female except in size.

*Legs.*—1.4.2.3. The distal prolateral process of the palp is broader than in *lawrencei* and is produced into a dorsal and a ventral spine at half of its length (figs. 5, 6). The conductor is forked.

*Types.*—Holotype female, allotype, female. Days Bay, Wellington, from leaf litter, 30 November, 1947, R. R. Forster. Type in Dominion Museum, Wellington.

*Records.*—Fort Hill Bush, Karori, ex leaf litter, 22 January, 1947, R. R. Forster. Stokes Valley, Wellington ex leaf litter, 10 January, 1948, R. R. Forster. Maruiana

Arm, Waikaremoana, ex leaf litter, 11 December, 1946, R. R. Forster. Panikiri Bluff, Waikaremoana, 3,800′, ex leaf litter, 12 December, 1946, R. R. Forster. Rimutuka District, ex leaf litter, 10 August, 1946, A. J. Healey. Butterfly Creek, Wellington, 2 June, 1946, R. R. Forster. Kiwi Hut, Lewis Valley, under log, 14 November, 1949, R. R. Forster.

*Remarks.*—This species is closely related to *T. lawrencei* but may be separated from it by the shape and relative size of the spermathecae and the structure of the male palp. Found in both the North and South Islands of New Zealand.

### **Toxopsiella centralis** n.sp.

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*Measurements* in millimetres.
Total length: 5·75.
Cephalothorax: Length 3·42, Width 2·34.
Abdomen: Length 4·14, Width 2·52.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 2.07 | 1.08 | 1.71 | 1.44 | 0.81 | 7.11 |
| 2 | 1.89 | 1.06 | 1.35 | 1.35 | 0.74 | 6.39 |
| 3 | 1.86 | 0.90 | 1.26 | 1.80 | 0.74 | 6.56 |
| 4 | 2.52 | 0.98 | 1.98 | 2.61 | 0.99 | 9.08 |
| Palp | 0.99 | 0.54 | 0.63 | | 0.90 | 3.06 |

*Colour.*—Carapace dark brown with a median longitudinal pale band behind the eyes to the posterior margin and submarginal pale bands. Abdomen finely mottled with small dark and pale brown areas.

*Eyes.*—From in front the anterior row is slightly procurved. The ratio of AME.ALE.PME.PLE=4.5.20.15. AME separated from each other by twice and from the PME by 5/4 times the diameter of an AME. PME separated from the ALE by 5/4 and from each other by 17/4 of the diameter of an AME, while the PLE are separated from each other by 55/4 and from the PME by 18/4. The quadrangle formed by the posterior eyes is wider behind than in front in the ratio of 17.11. The ratio of width in front to length is 11.10. The width of the clypeus is equal to 2½ the diameter of an AME.

*Chelicerae*, sternum, maxillae and labium as in *T. medialis*.

*Legs.*—4.1.3.2. Tibia and metatarsus of first leg and metatarsus of second leg each with a row of four pairs of stout spines on the ventral surface. Tibia of second leg with five pairs of similar spines. Third and fourth legs with irregularly placed weak spines on all segments. Trichobothria are situated as follows: *First leg:* Tibia 2.2.2.1, on the proximal third, Metatarsus 1.1.1.1.1., Tarsus 1.1.1.1. *Second leg:* Tibia 2.2.2. proximal, 1 at two-thirds, Tarsus 1.1.1.1. *Third and Fourth legs:* Tibia 2.2.2.2.1.1., Metatarsus 1.1.1.1., Tarsus 1.1.1.1. There is a tarsal organ at approximately three quarters of the length of each tarsus. Superior claws similar, with 7 strong teeth. Inferior with large, single proximal tooth.

*Palp.*—Weak spines present on all segments. Tibia with a single row of four trichobothria, tarsus with three. Tarsal claw straight, with five long teeth. Tarsal organ at three quarters of the length of the tarsus.

*Epigynum.*—As shown in fig. 9. There are two pairs of spermathecae, one pair large and roughly round, the second pair smaller and bean shaped (fig. 10).

*Type.*—Holotype female. Desert Road, ex leaf litter, 17 December, 1948, R. R. Forster, Canterbury Museum.

*Remarks.*—This species is closely related to *medialis* and *lawrencei* but may be easily separated from both these species by the form of the epigynum.

## **Toxopsiella orientalis** n.sp.

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*Measurements* in millimetres.
Total length: 8·69.
Cephalothorax: Length 4·14, Width 2·52.
Abdomen: Length 4·32, Width 3·06.

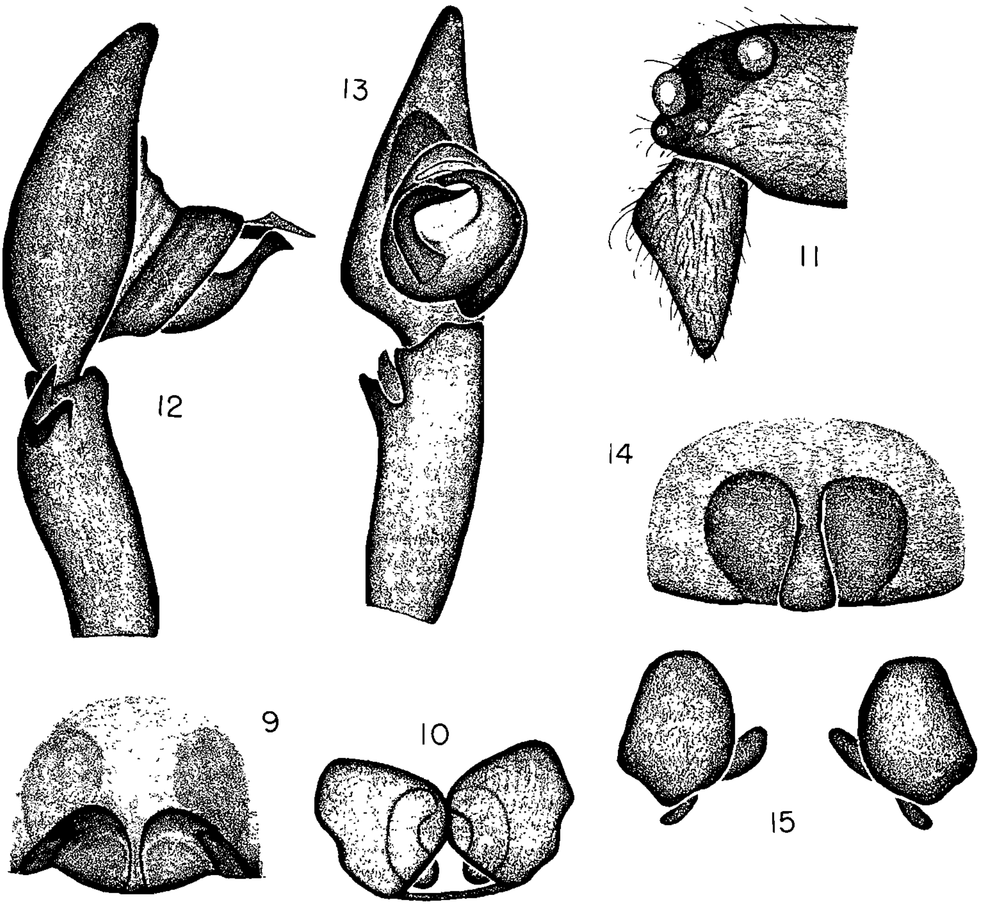
| Legs | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 2.43 | 1.24 | 1.98 | 1.80 | 0.96 | 8.41 |
| 2 | 2.16 | 1.21 | 1.53 | 1.51 | 0.81 | 7.32 |
| 3 | 2.25 | 1.08 | 1.33 | 1.89 | 0.90 | 7.45 |
| 4 | 2.70 | 1.21 | 2.16 | 2.97 | 1.17 | 10.21 |
| Palp | 1.17 | 0.63 | 0.72 | | 1.08 | 3.60 |

*Colour.*—Carapace brown with a pale area behind the eyes extending back as a median band to the posterior margin. Abdomen brown with numerous small pale spots on the dorsal surface, paler on the ventral surface. Legs brown with dark patches.

*Eyes* (fig. 11).—From in front the anterior row is slightly recurved, almost straight. Ratio of AME.ALE.PME.PLE=4.5.23.12 (fig. 11). The AME are separated from each other by 10/4 and from the ALE by 6/4 of the diameter of an AME. The PME are separated from each other by 26/4, from the ALE by 5/4 and from the PLE by 22/4 times the diameter of an AME. The PME are separated from each other by a distance equal to 15 times the diameter of an AME. The width of the clypeus is equal to 1½ times the diameter of an AME.

The maxillae, labium and sternum are typical. Chelicerae with a pair of strong teeth on both margins.

*Legs.*—4.1.3.2. First and second pairs of legs with strong ventral spines arranged 2.2.2.2. on both tibiae and metatarsi. Third and fourth legs with scattered spines. Trichobothria are situated as follows: *First leg:* Tibia 2.2.2.2.1.1., Meta-



Figs. 9—10. *Toxopsiella centralis* n.sp. Fig. 9 Epigynum. Fig. 10 Internal genitalia. Figs. 11—15 *Toxopsiella orientalis* n.sp. Fig. 11 Lateral view of anterior portion of cephalothorax. Figs. 12, 13 Male palp. Fig. 14 Epigynum. Fig. 15 Internal genitalia.

tarsus 1.1.1.1.1., Tarsus 1.1.1.1. *Second leg:* Tibia 2.2.2.2.1.1., Metatarsus 1.1.1.1.1., Tarsus 1.1.1.1. *Third and Fourth legs:* Tibia 2.2.2.1.1., Metatarsus 1.1.1.1.1.1., Tarsus 1.1.1.1. Superior claws similar, with a single row of 7-8 strong teeth. Inferior claw smooth. Tarsal organ present at approximately three quarters of the length of all tarsi.

*Pedipalpi.*—Spines present on femur, tibia and tarsus. A single row of four trichobothria present on proximal two thirds of tibiae, none on tarsi. Claw with eight teeth which are arranged in two groups of four.

*Epigynum.*—As illustrated in fig. 14. Internal genitalia as in fig. 15.

♂

*Measurements* in millimetres.
Total length: 8·11.
Cephalothorax: Length 3·96, Width 2·48.
Abdomen: Length 4·12, Width 2·62.

| Legs | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 2.81 | 1.08 | 3.60 | 2.34 | 1.19 | 11.02 |
| 2 | 2.16 | 0.98 | 1.71 | 1.80 | 0.90 | 7.55 |
| 3 | 1.98 | 0.90 | 1.26 | 1.90 | 0.81 | 6.85 |
| 4 | 2.70 | 0.98 | 1.98 | 2.81 | 1.19 | 9.66 |

*Colour.*—The single specimen examined has recently moulted.

*Eyes.*—Ratio of AME.ALE.PME.PLE=4.6.21.16 but the spacing of the eyes is very close to that described for the female.

*Legs.*—Spines as in female. Trichobothria are distributed as follows: *First leg:* Tibia 2.2.2.2.1.1., Metarsus 1.1.1.1.1., Tarsus 1.1.1.1., *Second leg:* Tibia 2.2.2.2.1.1. Metatarsus 1.1.1.1.1.1., Tarsus 1.1.1.1. *Third leg:* Tibia 2.2.2.2., Metatarsus, 1.1.1.1.1.1., Tarsus 1.1.1.1.1. *Fourth leg:* Tibia 2.2.2.2., Metatarsus 1.1.1.1.1., Tarsus 1.1.1.1.1. Superior claws similar, with 6-7 teeth. Inferior claw with a single proximal tooth.

*Palp* (figs. 12-13).—Distal process on tibia concave beneath. Cymbium slender distally, extending well beyond bulb. Embolus stout, terminating bluntly, conductor stout.

*Types.*—Holotype female. Leith Saddle, Dunedin, 3 April, 1952, B. J. Marples. Allotype male, Signal Hill, Dunedin, under log, 1 February, 1958, R. R. Forster, Otago Museum.

### **Toxopsiella alpina** n.sp.

♀

*Measurements* in millimetres.
Total length: 7·00.
Cephalothorax: Length 3·31, Width 2·16.
Abdomen: Length 3·60, Width 2·16.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 2.16 | 1.08 | 1.91 | 1.59 | 0.98 | 7.72 |
| 2 | 1.98 | 1.06 | 1.62 | 1.44 | 0.98 | 8.07 |
| 3 | 1.96 | 0.96 | 1.53 | 1.98 | 0.98 | 7.41 |
| 4 | 2.88 | 1.14 | 2.34 | 3.06 | 0.72 | 10.14 |
| Palp | 1.08 | 0.54 | 0.58 |  | 0.62 | 2.82 |

*Colour* (fig. 16).—Cephalothorax uniform pale yellow. Abdomen pale with a dark median band down the proximal third of the dorsal surface followed by six transverse chevrons. Legs pale.

*Eyes.*—Anterior row of eyes when viewed from in front almost straight. Ratio of AME.ALE.PME.PLE=5.5.22.17. The AME separated from each other by

6/5 and from the PME by 5/5 of the diameter of an AME. PME separated from the ALE by 4/5, the PLE by 18/5 and from each other by 16/5 of the diameter of an AME. The PLE are separated from each other by a distance equal to 12 times the diameter of an AME. The width of the clypeus is equal to 8/5 of the diameter of an AME.

Chelicerae, labium, maxillae as in *medialis.*

*Legs.*—4.1.3.2. First and second pairs of legs with five pairs of strong spines on the ventral surface of the tibiae and four pairs on metatarsi. Trichobothria distributed as follows: *First leg:* Tibia 2.1.1.1.1., Metatarsus 1.1.1., Tarsus 1.1.1.1.1., *Second leg:* Tibia 1.1.1.1., Metatarsus 1.1.1.1.1., Tarsus 1.1.1. *Third leg:* Tibia 1.1.1., Metatarsus1.1.1.1., Tarsus1.1.1.1.1.1. *Fourth leg:*Tibia1.1.1.1.1.1.2., Metatarsus 1.1.1.1.1.1.2., Tarsus 1.1.1.1.1.1.1. Superior claws similar, with a single row of from 9-10 strong teeth. Inferior claw with single basal tooth. Tarsal organ subdistal.

*Palp.*—Weak spines on tibia and tarsus. A double row of five trichobothria on tibia and a single row of four on tarsus. Tarsal organ not seen. Claw with nine teeth, increasing in size distally.

*Epigynum.*—The form of the epigynum is shown in fig. 17. There are two pairs of spermathecae, one pair pyriform and the other pair beanshaped as in *centralis* (fig. 18).

*Types.*—Holotype female. Fog Peak, 4,000′, Porters Pass, Canterbury, 19 December, 1945, R. R. Forster. Paratype female, same data. Canterbury Museum.

*Remarks.*—This distinctively marked species lives among loose stones and shingle on a relatively bare mountainside. It is close to *centralis* but can be separated by the different colouration, differences in the number and placing of the trichobothria and the different form of the epigynum.

### **Toxopsiella dugdalei** n.sp.

♀

*Measurements* in millimetres.

Total length: 5·78.

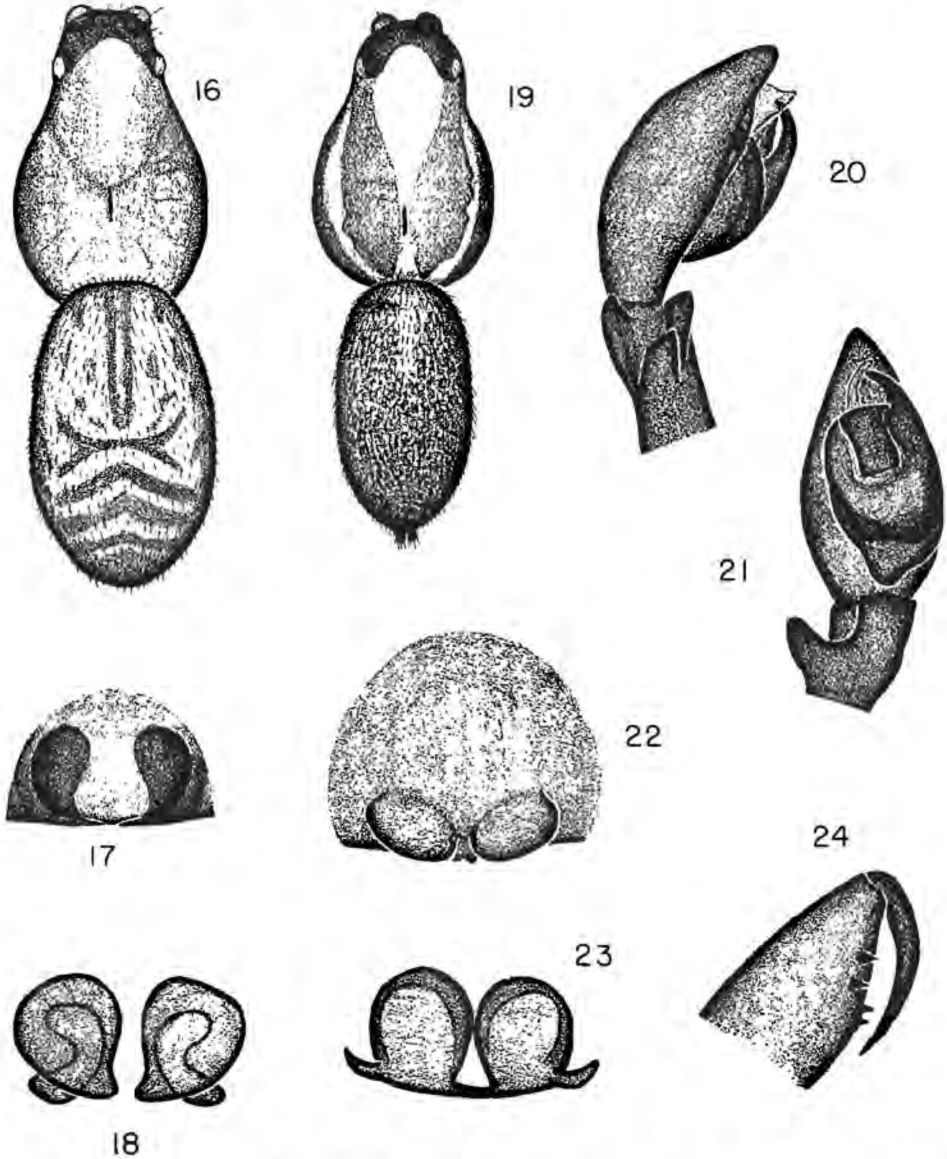
Cephalothorax: Length 3·24, Width 1·98.

Abdomen: Length 2·52, Width 1·62.

| Legs | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 1.81 | 0.91 | 1.54 | 1.36 | 0.85 | 6.47 |
| 2 | 1.73 | 0.90 | 1.18 | 1.26 | 0.78 | 5.87 |
| 3 | 1.62 | 0.68 | 1.08 | 1.53 | 0.72 | 5.63 |
| 4 | 2.42 | 0.90 | 1.80 | 2.52 | 0.97 | 8.71 |
| Palp | 0.90 | 0.45 | 0.54 |  | 0.88 | 2.77 |

*Colour* (fig. 19).—Carapace dark-brown with a pale area behind the eyes which extends back as a narrow band to the posterior margin merging with a further pale band down each sublateral margin. Abdomen mottled with black and pale brown patches on the dorsal surface, paler on the ventral surface.

*Eyes.*—Ratio of AME.ALE.PME.PLE=3.5.20.14. AME separated from each other by twice and from the PME by 4/3 of the diameter of an AME. The PME are separated from the ALE by 5/3, the PLE by 14/3 and from each other by 11/3



Figs. 16—18. *Toxopsiella alpina* n.sp. Fig. 16 Dorsal view of body. Fig. 17 Epigynum. Fig. 18 Internal genitalia. Figs. 20—24 *Toxopsiella dugdalei* n.sp. Figs. 20, 21 Male palp. Fig. 22 Epigynum. Fig. 23 Internal genitalia. Fig. 24 Male chelicera.

of the diameter of an AME. The PME are separated from each other by a distance equal to 55/3 of the diameter of an AME. The width of the clypeus is equal to the diameter of an AME.

Chelicerae, maxillae, labium and sternum typical.

*Legs.*—4.1.2.3. Tibia of first leg with three pairs of strong spines on the ventral surface. Metatarsus of first leg and tibia and metatarsus of second leg with four pairs of ventral spines. Trichobothria distributed as follows: *First leg:* Tibia 2.2.2.2., Metatarsus 1.1.1.1.1.1., Tarsus 1.1.1.1. *Second leg:* Tibia 2.2.2., Metatarsus 1.1., Tarsus 1.1.1.1. *Third leg:* Tibia 2.2.2.2.1., Metatarsus 1.1.1.1.1., Tarsus 1.1.1.1. *Fourth leg:* Tibia 2.2.2.2.1.1., Metatarsus 1.1.1.1.1., Tarsus 1.1.1.1.1. Superior claws similar, with 7 strong teeth. Inferior claw with a single proximal tooth. Tarsal organ subdistal.

*Palp.*—Spines present on tibia and tarsus. Tibia with two rows of three trichobothria, tarsus with a single row of four. Tarsal claw with five teeth.

*Epigynum.*—The epigynum has the form shown in fig. 22. One pair of rounded spermathecae are present which appear to be joined at their base. (Fig. 23.)

♂

*Measurements* in millimetres.
Total length: 5·24.
Cephalothorax: Length 3·06, Width 1·80.
Abdomen: Length 2·16, Width 1·44.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 2.61 | 1.08 | 2.62 | 2.43 | 1.26 | 10.00 |
| 2 | 2.06 | 0.98 | 1.62 | 1.71 | 0.98 | 7.35 |
| 3 | 1.88 | 0.90 | 1.32 | 1.80 | 0.82 | 6.72 |
| 4 | 2.44 | 0.90 | 1.98 | 2.70 | 1.14 | 9.16 |

Agreeing in most characters with male. Only the following need mention.

*Legs.*—1.4.2.3. The tibiae and metatarsi of the first and second pairs of legs with 4 pairs of stout spines on the ventral surface. Trichobothria distributed as follows: *First leg:* Tibia 0, Metatarsus 1.1., Tarsus 1.1. *Second leg:* Tibia 2.2.2. 1.1.1., Metatarsus 1.1.1.1.1.1., Tarsus 1.1.1.1.1., *Third leg:* Tibia 2.2.2., Metatarsus 1.1.1.1.1.1., Tarsus 1.1.1.1. *Fourth leg:* Tibia 2.2.2.1.1., Metatarsus 1, Tarsus 1.1.1.1.1.

*Palp* (figs. 20, 21).—The tibial process is complex consisting of three projections which are joined at the base. The embolus is stout but terminated sharply and the conductor broad and flattened.

*Types.*—Holotype female. Allotype male. Junction of Casey River and Poulter River, Canterbury, ex leaf litter, 4 April, 1953, J. S. Dugdale, Canterbury Museum.

*Remarks.*—This species is similar in appearance to the preceding species but differs sharply in the form of the epigynum. The species is named for Mr J. S. Dugdale who has collected much interesting material in the past.

## **Toxopsiella parrotti** n.sp.

♀

*Measurements* in millimetres.
Total length: 6·51.
Cephalothorax: Length 3·06, Width 1·91.
Abdomen: Length 3·42, Width 2·52.

| Legs | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 1.71 | 0.83 | 1.33 | 1.26 | 0.78 | 5.91 |
| 2 | 1.62 | 0.72 | 1.08 | 1.08 | 0.72 | 5.22 |
| 3 | 1.62 | 0.73 | 0.98 | 1.44 | 0.72 | 5.49 |
| 4 | 2.06 | 0.90 | 1.68 | 2.34 | 0.93 | 7.91 |
| Palp | 0.81 | 0.38 | 0.54 | | 0.83 | 2.56 |

*Colour.*—Similar to *lawrencei.*

*Eyes.*—Ratio of AME.ALE.PME.PLE=4.6.20.15. The AME separated from each other by 5/4 and from the PME by 6/4 of the diameter of an AME. PME separated from ALE by 5/4, from the PLE by 20/4 and from each other by 16/4 of the diameter of an AME. PLE separated from each other by 55/4 times the diameter of an AME. The width of the clypeus is equal to the diameter of an AME.

Chelicerae, labium, maxillae and sternum typical.

*Legs.*—4.1.3.2. Tibia of first leg with three pairs of spines on the ventral surface. Metatarsus of first leg on both tibia and metatarsus of second leg with four pairs on the ventral surface. Trichobothria distributed as follows: *First leg:* Tibia 2.2.2.1., Metatarsus 1.1.1.1., Tarsus 1.1.1.1.1. *Second leg:* Tibia 2.2.2.1., Metatarsus 1.1.1.1., Tarsus 1.1.1.1. *Third leg:* Tibia 2.2.2., Metatarsus 1.1.1., Tarsus 1.1.1.1. *Fourth leg:* Tibia 2.2.2., Metatarsus 0, Tarsus 1.1.1.1. Superior claws similar, with eight teeth. Inferior claw with two teeth. Subdistal tarsal organ on all tarsi.

*Palp.*—Numerous spines on tarsus. Trichobothria, tibia 2.2.2., tarsus 1.1.1. Tarsal organ subdistal. Claw with 7 strong teeth.

*Epigynum.*—As in fig. 25. Internal genitalia as in fig. 26.

*Types.*—Holotype female and paratype females, Kokopotuki, Westland, October, 1946, A. W. Parrott. Otago Museum.

## **Toxopsiella australis** n.sp.

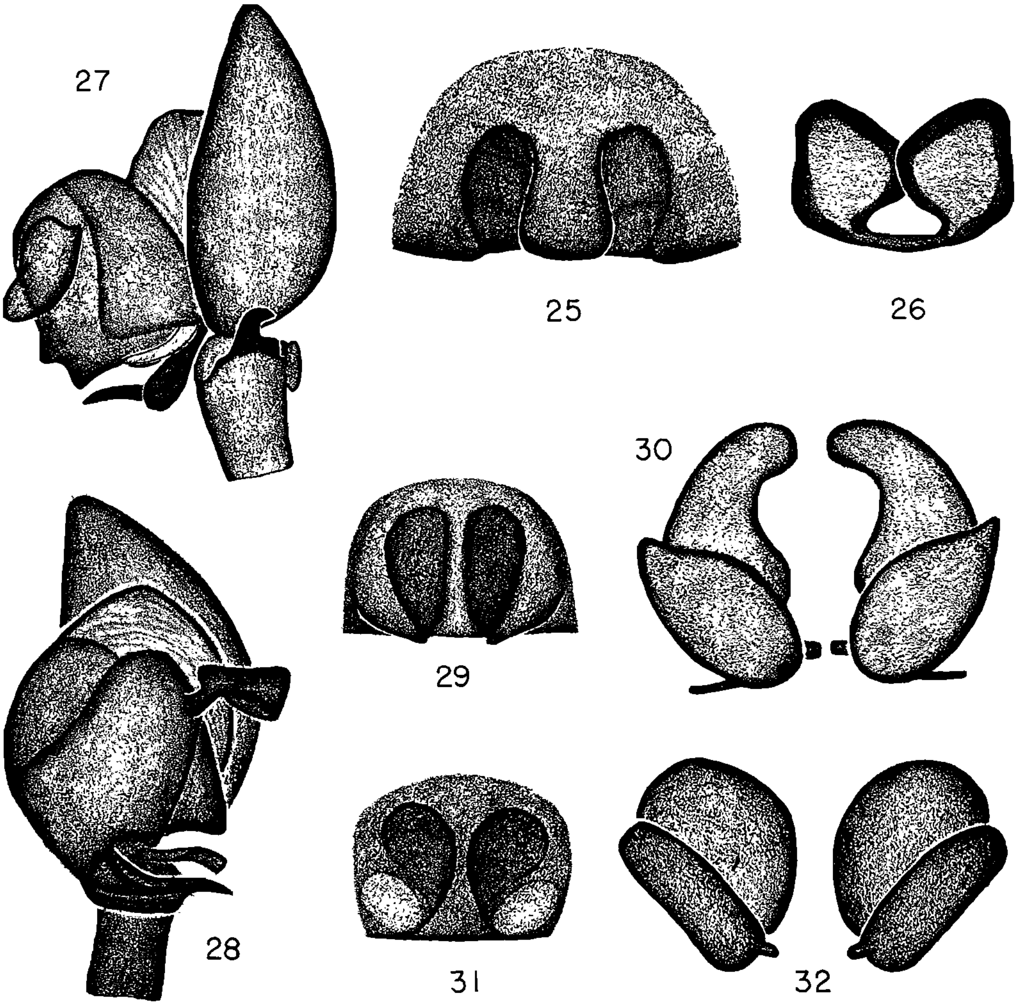
♀

*Measurements* in millimetres.
Total length: 6·71.
Cephalothorax: Length 2·88, Width 2·16.
Abdomen: Length 3·78, Width 2·34.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 2.22 | 0.98 | 2.06 | 1.98 | 0.61 | 7.85 |
| 2 | 2.21 | 0.90 | 1.73 | 1.87 | 0.61 | 7.32 |
| 3 | 2.34 | 0.90 | 1.71 | 2.22 | 0.81 | 7.98 |
| 4 | 2.79 | 0.98 | 2.41 | 3.42 | 1.08 | 10.68 |
| Palp | 0.98 | 0.36 | 0.61 | | 0.98 | 2.93 |

*Colour.*—The carapace is similar to the previously described species but the pale submarginal bands are wider. Abdomen heavily shaded with black but with pale patches on the antero-lateral surfaces.

*Eyes.*—From in front the anterior row is straight. Ratio of AME.ALE. PME.PLE=5.6.20.20. The AME are separated from each other and from the PME by a distance equal to the diameter of an AME. The PME are separated from the ALE by 4/5, from the PLE by 21/5 and from each other by 15/5 of the diameter of an AME. The PLE are separated from each other by a distance equal to 11 times



Figs. 25—26. *Toxopsiella parrotti* n.sp. Fig. 25 Epigynum. Fig. 26 Internal genitalia. Figs. 27, 28 Male palp. Figs. 27—30 *Toxopsiella australis* n.sp. Figs. 27, 28 Male palp. Fig. 29 Epigynum. Fig. 30 Internal genitalia. Figs. 31—32. *Toxopsiella minuta* n.sp. Fig. 31 Epigynum. Fig. 32 Internal genitalia.

the diameter of an AME. The width of the clypeus is slightly more than the diameter of an AME.

Chelicerae, labium, maxillae and sternum typical.

*Legs.*—4.3.1.2. First and second legs with five pairs of spines on the ventral surfaces of tibiae and metatarsi. Trichobothria distributed as follows: *First leg:* Tibia 2.2.2.1., Metatarsus 1.1.1.1.1., Tarsus 1.1.1.1.1.1. *Second leg:* Tibia 2.2.2.1., Metatarsus 1.1.1.1., Tarsus 1.1.1.1. *Third leg:* Tibia 2.2.2.1., Metatarsus 1.1.1.1.1.1., Tarsus 1.1.1.1.1.1., *Fourth leg:* Tibia 2.2.2.1.1.1., Metatarsus 1.1.1.1.1.1., Tarsus 1.1.1.1.1.1. Superior claws similar with 6 short teeth. Inferior claw with three teeth. Tarsal organ present on all tarsi at 3/4 of the length.

*Palp.*—Scattered spines present, on tibia and tarsus. Tarsal organ not seen. Tibia with single row of five trichobothria, tarsus with four.

*Epigynum* (figs. 29, 30).—The form of the epigynum is typical but clearly separable from other species. There are two pairs of spermathecae as in *centralis* but the dorsal pair are much bigger.

♂

*Measurements* in millimetres.
Total length: 5·74.
Cephalothorax: Length 2·88, Width 1·80.
Abdomen: Length 2·88, Width 1·98.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 2.52 | 0.98 | 2.34 | 2.34 | 0.79 | 9.87 |
| 2 | 2.51 | 0.90 | 1.98 | 2.32 | 0.90 | 8.61 |
| 3 | 2.34 | 0.90 | 1.80 | 2.70 | 0.89 | 8.63 |
| 4 | 2.88 | 0.81 | 2.52 | 3.78 | 1.31 | 11.30 |

The male shares many characters with the female and only the following need mention.

*Colour.*—Similar to female but the black markings on the dorsal surface of the abdomen are broken into four indistinct chevrons.

*Eyes.*—Ratio AME.ALE.PME.PLE=5.6.15.15 but the relative spacing of the eyes is as in the female.

*Legs.*—4.1.3.2. Trichobothria. *First leg:* Tibia 2.2.2.1., Metarsus 1.1.1.1.1.1., Tarsus 1.1.1.1.1. *Second leg:* Tibia 1.2.1.2.2.2.1., Metatarsus 1.1.1.1.1.1., Tarsus 1.1.1.1.2., *Third leg:* Tibia 2.2.2.1.1.1., Metatarsus 1.1.1.1.1., Tarsus 1.1.1.1.1.1. *Fourth leg:* Tibia 3.1.1.1.1., Metatarsus 1.1.1.1.1.1.1., Tarsus 1.1.1.1. Superior claws with six teeth but smaller than female.

*Palp.*—There is hooked apical process and a further oval lobe fused on one side (fig. 27). The embolus is slender and sharp and rests along a stouter conductor (fig. 28). The bulb of the palp illustrated is partly extended with a resultant reversing of the embolus and conductor.

*Types.*—Holotype male, allotype female, paratypes, Kakapo Ridge, Thompson Sound, Fiordland, 3,400′, 21 January, 1958, R. R. Forster.

*Records.*—Mt Irene region, on saddle leading to Charles Sound, Fiordland, 4,700′, 27 January, 1953, B. Wisely. Lake Poteriteri, Princess Range, Fiordland, 10 November, 1952, G. W. Ramsay.

*Remarks.*—This species seems to be restricted to subalpine regions of Fiordland. It has been found under stones lying in the subalpine scrub zone and also at higher levels. *T. australis* shows many features in common with the preceding species. Among the larger species possession of equal-sized posterior eyes are found only in this species, *perplexa* and *minuta.*

### **Toxopsiella minuta** n.sp.

♀

*Measurements* in millimetres.
Total length: 4·16.
Cephalothorax: Length 1·73, Width 1·26.
Abdomen: Length 2·41, Width 1·52.

| Leg | Femur | Patella | Tibia | Metataruss | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 1.21 | 0.54 | 1.08 | 0.98 | 0.38 | 4.19 |
| 2 | 1.19 | 0.54 | 0.90 | 0.91 | 0.39 | 3.93 |
| 3 | 1.20 | 0.52 | 0.81 | 1.08 | 0.39 | 4.00 |
| 4 | 1.51 | 0.54 | 1.21 | 1.51 | 0.54 | 5.31 |
| Palp | 0.54 | 0.27 | 0.36 |  | 0.58 | 1.75 |

*Colour.*—Carapace yellow-brown with a broad dark-brown band down each midlateral surface. Abdomen grey with numerous paler spots.

*Eyes.*—From the front the anterior row is almost straight. Ratio of AME. ALE.PME.PLE=5.5.18.16. AME separated from the PME and each other by 6/5 of the diameter of an AME. PME separated from ALE by 5/5, from the PLE by 19/5 and from each other by 15/5 of the diameter of an AME. PLE separated from each other by 50/5 of the diameter of an AME. Quadrangle formed by the posterior eyes wider behind than in front in ratio of 82·51 and broader than wide in the front in the ratio of 53.51. Clypeus equal to 6/5 of the diameter of an AME.

Chelicerae, sternum, maxillae and labium typical.

*Legs.*—4.1.3.2. First and second legs with five pairs of strong spines on the ventral surface of tibiae and metatarsi. Trichobothria distributed as follows: *First leg:* Tibia 1.2.1.1.1.1., Metatarsus 1.1.1.1., Tarsus 1.1.1.1. *Second leg:* Tibia 1.2.1.1.1., Metatarsus 1.1.1.1., Tarsus 1.1. *Third leg:* Tibia 1.2.1.1.1.1., Metatarsus 1.1.1.1., Tarsus 1.1.1.1. *Fourth leg:* Tibia 1.2.1.1.1.1.1.1., Metatarsus 1.1.1.1., Tarsus 1 median. Tarsal organ situated at two thirds of the length of the tarsus of all legs. Superior claws similar with five teeth. Inferior claw with four teeth.

*Palp.*—Trichobothria distributed: Tibia 1.1.2.1., Tarsus 1. Claw with 3 teeth near base.

*Epigynum.*—The form of the epigynum and internal genitalia is shown in figs. 31, 32.

*Types.*—Holotype female. Upper Takaka, ex leaf litter, 17 May, 1953, C. Holmes. Otago Museum.

*Record.*—Dawson Falls, Mount Egmont, from leaf litter in sub-alpine belt, 3,600′, May, 1954, M. P. Buchter.

### **Toxopsiella perplexa** n.sp.

♀

*Measurements* in millimetres.
Total length: 3·74.
Cephalothorax: Length 1·91, Width 1·32.
Abdomen: Length 1·80, Width 1·26.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 1.51 | 0.62 | 1.44 | 1.32 | 0.46 | 5.35 |
| 2 | 1.44 | 0.54 | 1.13 | 1.26 | 0.47 | 4.94 |
| 3 | 1.31 | 0.54 | 1.08 | 1.44 | 0.54 | 4.91 |
| 4 | 1.90 | 0.63 | 1.72 | 2.16 | 0.87 | 7.28 |

*Colour.*—Carapace brown with pale submarginal lateral bands and a median longitudinal pale band from the eyes to the posterior margin of the carapace. Abdomen pale brown, lightly shaded with darker reddish brown.

*Eyes.*—Ratio of AME.ALE.PME.PLE=4.5.11.11. AME separated from the PME by 5/4 and from each other by 4/4 of the diameter of an AME. PME separated from ALE by 4/4, from the PLE by 9/4 and from each other by 9/4 of the diameter of an AME. PME separated from each other by 29/4 of this width. Width of clypeus equal to the diameter of an AME.

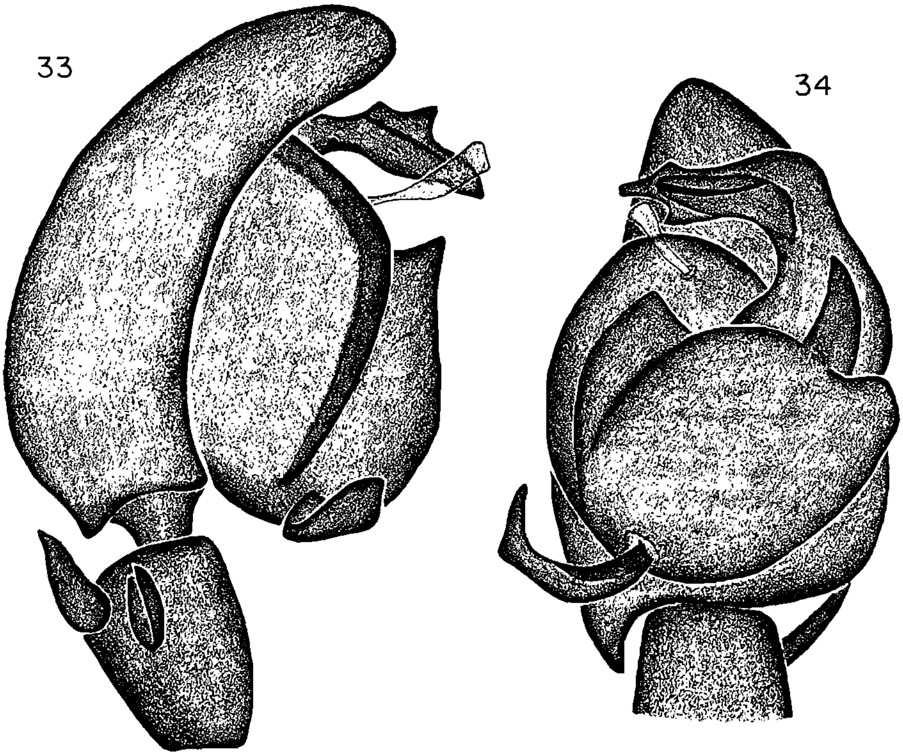
Chelicerae, sternum, maxillae, and labium typical.

*Legs.*—4.1.2.3. First and second legs with five pairs of spines on the ventral surface of the tibiae and four pairs on ventral surface of metatarsi. Only a single trichobothrium on the tarsus of the first leg appears to be present. Superior claws similar, with 7 long teeth; inferior with 3 teeth. Tarsal organ situated at 3/4 length of all tarsi.

*Palp.*—The form of the palp is shown in figs. 33, 34. The embolus is slender and rests inside a strongly developed conductor.

*Type.*—Holotype male. Levin, under log, 6 June, 1948, R. R. Forster.

*Remarks.*—The form of the palp is very different from the other species of *Toxopsiella* where the male is known and it is possible that this species will later be transferred to *Cycloctenus.*



Figs. 33—34. *Toxopsiella perplexa* n.sp. Male palp.

The seven species described below, *muscicola*, *crypta*, *salmoni*, *marplesi*, *insula*, *otagoa* and *aucklandensis*, are all closely related and seem to form a species group. The species are allopatric but collectively range over most of New Zealand. Apart from their small size which sets them aside from the previously described species there is a tendency for the posterior four eyes to be of equal size or for the PLE to be larger than the PME which is the reverse of the situation found in most of the larger species. The seven species described are easily separated by the form of the epigynum and also differ in the arrangement and number of spines and trichobothria.

### **Toxopsiella muscicola** n.sp.

♀

*Measurements* in millimetres.
Total length: 2·14.
Cephalothorax: Length 0·90, Width 0·72.
Abdomen: Length 1·26, Width 0·98.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 0.62 | 0.27 | 0.63 | 0.54 | 0.27 | 2.33 |
| 2 | 0.62 | 0.25 | 0.59 | 0.49 | 0.27 | 2.22 |
| 3 | 0.61 | 0.21 | 0.54 | .054 | 0.29 | 2.19 |
| 4 | 0.83 | 0.29 | 9.59 | 0.62 | 0.29 | 2.62 |
| Palp | 0.31 | 0.18 | 0.18 | | 0.28 | 0.95 |

*Colour* (fig. 35).—Carapace dark brown with a pale patch behind the eyes through which a narrow white band extends from behind the eyes to near the fovea, Abdomen pale with white patches on the dorsal surface. Legs dark. The legs and carapace show irridescent colours with oblique light.

*Eyes.*—From in front the anterior row are strongly recurved. Ratio of AME. ALE.PME.PLE=3.4.8.9. AME separated from each other by 4/3 and from the PME by 5/3 of the diameter of an AME. PME separated from the ALE by 3/3, from the PLE by 7/3 and from each other by 5/3 of the diameter of an AME. PLE separated from each other by 27/3 times this diameter. Width of the clypeus equal to twice the diameter of an AME.

*Cephalothorax.*—The carapace is rather squat, only slightly longer than it is wide and fairly flat in profile.

*Chelicerae.*—Short, lateral base present. Two teeth on pro- and retromargins.

*Maxillae.*—Margins parallel, as long as wide.

*Labium.*—As long as wide, anterior margin straight.

*Sternum.*—Shield-shaped, terminating posteriorly between coxae IV. Longer than wide in ratio of 8.7.

*Legs.*—4.1.2.3. First and second pairs of legs with 3 pairs of spines on ventral surface of tibiae and four pairs on metatarsi. Trichobothria present as follows: *First leg:* 0. *Second leg:* Tibia 1.1. *Third leg:* Tibia 1.1.1. *Fourth leg:* Tibia 1.1.1.1. Tarsal organ on all tarsi, slightly beyond halfway. Superior claws similar with four teeth. Inferior claw smooth.

*Palp.*—Three trichobothria on tibia arranged 2.1. Tarsal claw slender and smooth.

*Epigynum.*—As shown in fig. 36. Spermathacae as in fig. 37.

*Types.*—Holotype female and paratype females. Lake Te Au, beyond South Arm of Lake Te Anau, ex moss on forest floor, 12-24 January, 1953, R. R. Forster. Canterbury Museum.

*Record.*—Caswell Sound, Fiordland, 18 April, 1949, R. R. Forster.

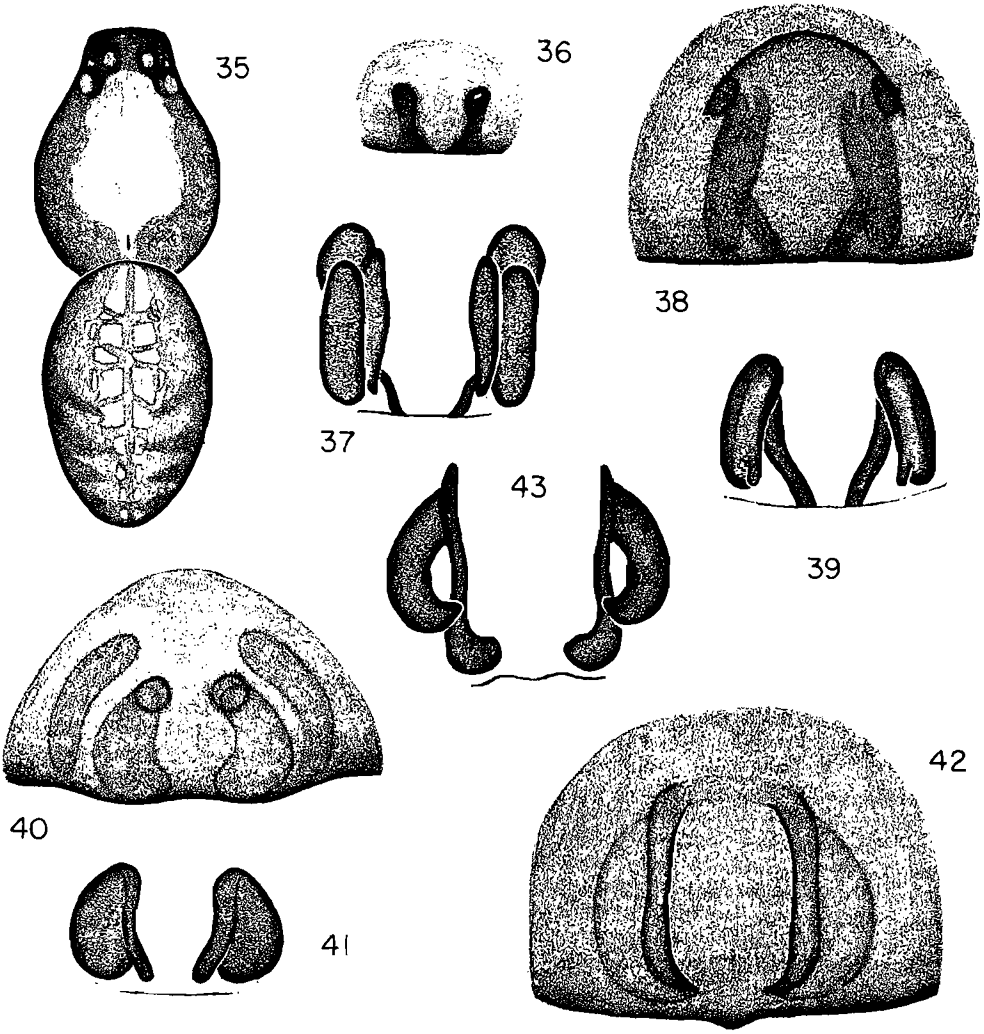
## **Toxopsiella crypta** n.sp.

♂

*Measurements* in millimetres.
Total length: 1·97.
Cephalothorax: Length 0·90, Width 0·76.
Abdomen: Length 1·08, Width 0·95.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 0.71 | 0.27 | 0.68 | 0.54 | 0.27 | 2.47 |
| 2 | 0.68 | 0.19 | 0.54 | 0.54 | 0.25 | 2.20 |
| 3 | 0.69 | 0.19 | 0.52 | .053 | 0.26 | 2.19 |
| 4 | 0.74 | 0.22 | 0.57 | 0.68 | 0.31 | 2.52 |
| Palp | 0.32 | 0.16 | 0.20 | | 0.31 | 0.99 |

*Colour.*—Cephalothorax and legs as in *muscicola*. Abdomen pale brown with darker brown shading.



Figs. 35—37. *Toxopsiella muscicola* n.sp. Fig. 35 Dorsal surface of body. Fig. 36 Epigynum. Fig. 37 Internal genitalia. Figs. 38—39 *Toxopsiella crypta* n.sp. Fig. 38 Epigynum. Fig. 39 Internal genitalia. Figs. 40—41 *Toxopsiella salmoni* n.sp. Fig. 40 Epigynum. Fig. 41 Internal genitalia. Figs. 42—43 *Toxopsiella marplesi* n.sp. Fig. 42 Epigynum. Fig. 43 Internal genitalia.

*Eyes.*—From in front anterior row strongly recurved. Ratio AME.ALE.PME. PLE=3.2.7.8. AME separated from each other and from the PME by a distance equal to the diameter of an AME. PME separated from each other by 5/3, from the PLE by 6/3 and from the ALE by 3/3 of the diameter of an AME. PLE separated from each other by 24/3 of this diameter. Quadrangle formed by the posterior eyes wider behind then in front in ratio of 40.19 and longer than wide in front in ratio of 21.19. Width of clypeus equal to 4/3 of the diameter of an AME.

Chelicerae, maxillae, labium and sternum as in *muscicola.*

*Legs.*—4.1.2.3. Tibiae and metatarsi of first and second pairs of legs with 3 pairs of spines on ventral surface. Trichobothria few, distributed as follows: *First and Second legs:* Tibia 1 median, Metatarsus 0, Tarsus 1 median (the organ recorded here as a trichobothrium appears as a typical pitted base but the hair is extremely short). *Third and Fourth legs:* Tibia 0, Metatarsus 1.1.1.1., Tarsus 1 median. Superior claws similar with 3 teeth. Inferior claw with 2 teeth. Tarsal organ situated just beyond the median surface.

*Palp.*—Tibia with four trichobothria distributed 1.2.1. Tarsal organ subdistal. Claw smooth.

*Epigynum.*—As shown in fig. 38. The spermathecae are present as a pair of simple convuluted tubes (fig. 39).

*Types.*—Holotype female. Lake Te Au, beyond South Arm of Lake Te Anau, ex moss, 12-24 January, 1953, R. R. Forster.

*Remarks.*—*T. crypta* is separated from *muscicola* by its smaller size, the different form of the epigynum and the fewer paired spines on the ventral surface of the metatarsi of the first two pairs of legs.

## **Toxopsiella salmoni** n.sp.

♀

*Measurements* in millimetres.
Total length: 1·77.
Cephalothoras: Length 0·81, Width 0·72.
Abdomen: Length 0·98, Width 0·81.

| Legs | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 0.63 | 0.18 | 0.52 | 0.49 | 0.22 | 2.04 |
| 2 | 0.61 | 0.20 | 0.49 | 0.45 | 0.20 | 1.95 |
| 3 | 0.59 | 0.20 | 0.49 | 0.45 | 0.24 | 1.97 |
| 4 | 0.65 | 0.20 | 0.54 | 0.49 | 0.29 | 2.17 |
| Palp | 0.27 | 0.12 | 0.18 | | 0.19 | 0.76 |

*Colour.*—As in *muscicola.*

*Eyes.*—From in front anterior row strongly recurved. Ratio of AME.ALE. PME.PLE=3.3.7.9. AME separated from the PME by 5/3 and from each other by 3/3 of the diameter of an AME. PME separated from the ALE by 3.3, the PLE by 4/3 and from each other by 5/3 of the diameter of an AME. PLE separated from each other by 20/3 of this diameter. Quadrangle formed by the posterior eyes wider behind than in front in ratio of 38.19 and longer than wide in front in ratio of 20.19. Height of clypeus equal to 5/3 of the diameter of an AME.

Chelicerae, maxillae, labium and sternum as in *muscicola*.

*Legs.*—4.1.3.2. Tibia of first and second pairs of legs with 3 pairs of spines on the ventral surface, metatarsi with four pairs. Trichobothria distributed as follows. *First leg:* Tibia 1 median. Second leg: *Metatarsus* 1 median. *Third leg:* Tibia 1 proximal. *Fourth leg:* Metatarsus 1 proximal. Tarsal organ situated at two thirds of the length of all segments. Superior claws similar, with 7 teeth. Inferior claw smooth.

*Palp.*—Trichobothria present on tibia, 1 median, and tarsus, 2.1. Tarsal organ placed at two thirds. Tarsal claw smooth.

*Epigynum.*—As shown in fig. 40. A single pair of spermathecae present (fig. 41).

*Type.*—Holotype female. Awakina Valley, ex moss, 26 March, 1948, J. T. Salmon.

*Remarks.*—Close to *crypta* but with distinct form or epigynum and internal genitalia.

### **Toxopsiella marplesi** n.sp.

♀

*Measurements* in millimetres.

Total length: 2·17.

Cephalothorax: Length 1·08, Width 0·82.

Abdomen: Length 1·08, Width 0·90.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 0.82 | 0.27 | 0.74 | 0.72 | 0.29 | 2.84 |
| 2 | 0.84 | 0.28 | 0.72 | 0.73 | 0.36 | 2.93 |
| 3 | 0.90 | 0.25 | 0.72 | 0.79 | 0.37 | 3.03 |
| 4 | 0.90 | 0.20 | 0.72 | 0.86 | 0.37 | 3.05 |
| Palp | 0.38 | 0.19 | 0.21 | | 0.32 | 1.10 |

*Colour.*—Cephalothorax as in *muscicola*. Abdomen mottled with white markings, and with a broad transverse brown band across the median surface.

*Eyes.*—From in front the anterior row is strongly recurved. Ratio AME.ALE. PME.PLE=4.2.7.10. AME separated from PME by 5/4 and from each other by 4/4 of the diameter of an AME. PME separated from the ALE by 3/4, from the PLE by 5/4 and from each other by 8/4 of the diameter of an AME. PLE separated from each other by a distance equal to 29/4 of the diameter of an AME. Height of clypeus equal to the diameter of an AME.

Chelicerae, maxillae, labium and sternum as in *muscicola*.

*Legs.*—4.3.2.1. First two pairs of legs with three pairs of spines on the ventral surface of the tibial and four pairs on the metatarsi. Three trichobothria are present on the tibiae of the first pair of legs and a single median trichobothrium is situated on the median surface of each tarsus. Superior claws similar, with 3-4 teeth. Inferior claw with two small proximal teeth. Tarsal organ subdistal.

*Palp.*—Trichobothria and tarsal organ lacking. Tarsal claw smooth.

*Epigynum.*—The form of the epigynum is shown in fig. 42 and the internal genitalia in fig. 43.

*Types.*—Holotype female. East of Kaikohe, swept in Kauri Forest, 21 August, 1953, B. J. Marples. Otago Museum.

### **Toxopsiella insula** n.sp.

♀

*Measurements* in millimetres.

Total length: 2·50.

Cephalothorax: Length 1·08, Width 0·90.

Abdomen: Length 1·44, Width 0·94.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 0.83 | 0.36 | 0.81 | 0.72 | 0.27 | 2.99 |
| 2 | 0.90 | 0.36 | 0.73 | 0.72 | 0.28 | 2.99 |
| 3 | 0.90 | 0.36 | 0.72 | 0.81 | .030 | 3.09 |
| 4 | 0.99 | 0.30 | 0.87 | 0.90 | 0.44 | 3.70 |
| Palp | 0.36 | 0.13 | 0.21 |  | 0.31 | 1.01 |

*Colour.*—As in *muscicola.*

*Eyes.*—From in front the anterior row is strongly recurved. Ratio of AME. ALE.PME.PLE=4.3.9.10. AME separated from the PME by 6/4 and from each other by 3/4 of the diameter of an AME. PME separated from the ALE by 4/3, the PLE by 10/3 and from each other by 5/3 of the diameter of an AME. PLE separated from each other by 32/3 of the diameter of an AME. Quadrangle formed by the posterior eyes wider behind than in front in the ratio of 52.23 and longer than wide in the front in the ratio of 27.23. Height of clypeus equal to 7/4 of the diameter of an AME.

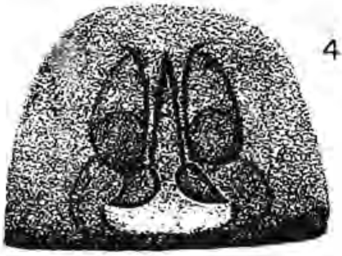
Chelicerae, maxillae, labium and sternum as in *muscicola.*

*Legs.*—4.3.1.2. First and second pairs of legs with three pairs of spines on the ventral surface of the tibiae and four pairs on the ventral surface of metatarsi. Trichobothria are distributed as follows: *First leg:* Tibia 1.1, Metatarsus 1.1, Tarsus 0. *Second leg:* Tibia 1.1, Metatarsus 1 distal, Tarsus 1 median. *Third leg:* Tibia 1.1.1.1., Metatarsus and Tarsus 0. *Fourth leg:* Tibia 1 proximal, Metatarsus, Tarsus 0. Superior claws similar with 4 teeth. Inferior with 3 teeth. Tarsal organ present on all tarsi at 3/4.

*Palp.*—Tibia with single row of two trichobothria. Tarsal claw smooth. Tarsal organ subdistal.

*Epigynum.*—As shown in fig. 44. There is a pair of small pyriform lobes from each of which a narrow ridge extends back. Internal genitalia as in fig. 45.

*Type.*—Holotype female. Little Barrier Is., Tom Thumb Track, 23 November, 1954, G. Ramsay. Otago Museum.



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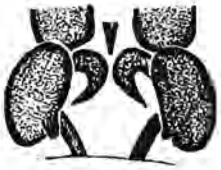

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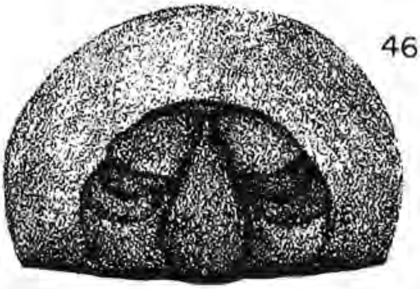

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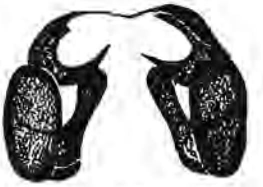

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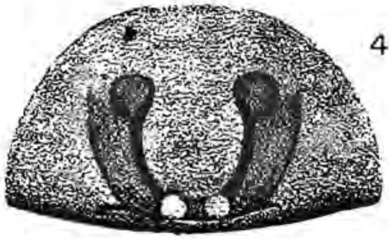

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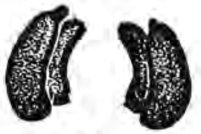

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Figs. 44—45. *Toxopsiella insula* n.sp. Fig. 44 Epigynum. Fig. 45 Internal genitalia. Figs. 46—47 *Toxopsiella otagoa* n.sp. Fig. 46 Epigynum. Fig. 47 Internal genitalia. Figs. 48—49 *Toxopsiella aucklandensis* n.sp. Fig. 48 Epigynum. Fig. 49 Internal genitalia.

### **Toxopsiella otagoa** n.sp.

♀

*Measurements* in millimetres.

Total lentgh: 2·28.

Cephalothorax: Length 1·08, Width 0·82.

Abdomen: Length 1·35, Width 0·96.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 0.81 | 0.36 | 0.72 | 0.63 | 0.27 | 2.79 |
| 2 | 0.79 | 0.36 | 0.64 | 0.56 | 0.29 | 2.64 |
| 3 | 0.81 | 0.28 | 0.64 | 0.65 | 0.31 | 2.69 |
| 4 | 0.89 | 0.30 | 0.72 | 0.72 | 0.33 | 2.96 |
| Palp | 0.29 | 0.13 | 0.19 | | 0.33 | 0.95 |

*Colour.*—As in *muscicola.*

*Eyes.*—From in front the anterior row is strongly recurved. Ratio of AME. ALE.PME.PLE=3.4.7.8. AME separated from the ALE by 5/3 and from each other by 4/3 of the diameter of an AME. PME separated from ALE by 3/3, from the PLE by 6/3 and from each other by 8/3 of the diameter of an AME. PLE separated from each other by a distance equal to 27/3 the diameter of an AME. Height of clypeus 5/3 of the diameter of an AME.

Chelicerae, maxillae, labium and sternum as in *muscicola.*

*Legs.*—4.1.3.2. First and second legs with three pairs of spines on the ventral surface of tibiae and four pairs on ventral surface of metatarsi. Trichobothria distributed as follows: *First leg:* Tibia 1.1.1., Metatarsus 1.1.1., Tarsus 1. *Second leg:* Tibia 1.1.1.1. Metatarsus 1.1.1.1., Tarsus 1.1. *Third leg:* Tibia 1.1.1.1., Metatarsus 1.1.1.1., Tarsus 1. *Fourth leg:* Tibia 1.1.1.1.1., Metatarsus 1.1.1., Tarsus 1. Superior claws similar with 6 teeth. Inferior claw with single basal tooth. Tarsal organ placed slightly beyond the midpoint.

*Epigynum.*—The form of the epigynum and internal genitalia are as shown in figs. 46, 47.

*Types.*—Holotype female. Dunedin, swept from bush on slope of Swampy Hill, 13 July, 1952, B. J. Marples. Otago Museum.

### **Toxopsiella aucklandensis** n.sp.

♀

*Measurements* in millimetres.
Total length: 1·91.
Cephalothorax: Length 0·82 Width 0·62.
Abdomen: Length 1·08, Width 0·86.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 0.58 | 0.18 | 0.46 | 0.46 | 0.22 | 1.90 |
| 2 | 0.63 | 0.27 | 0.46 | 0.42 | 0.25 | 2.03 |
| 3 | 0.61 | 0.23 | 0.44 | 0.45 | 0.27 | 2.00 |
| 4 | 0.63 | 0.23 | 0.49 | 0.46 | 0.30 | 2.11 |
| Palp | 0.21 | 0.13 | 0.21 | | 0.25 | 0.80 |

*Colour.*—As in *muscicola.*

*Eyes.*—When viewed from in front the front row is strongly recurved. Ratio of AME.ALE.PME.PLE=3.3.7.8. AME separated from PME and each other by 4/3 of the diameter of an AME. PME separated from ALE by 2/3 from PLE by 6/3 and from each other by 12/3 of the diameter of an AME. PLE separated from each other by 8 times the diameter of the AME. Height of clypeus equal to 5/3 of the diameter of an AME.

Chelicerae, maxillae, labium and sternum as in *muscicola.*

*Legs.*—4.2.3.1. First and second pairs of legs with three pairs of spines on the ventral surface of the tibiae and four pairs on ventral surface of the metatarsi. Trichobothria distributed as follows: *First leg:* Tibia 1 distal, Metatarsus 1.1., Tarsus

0. *Second leg:* Tibia 1.2.2. Metatarsus 2 at one-third. Tarsus 1. *Third leg:* Tibia 2.1.2. Metatarsus 1.1. Tarsus 1. *Fourth leg:* Tibia 1.2.1.. Metatarsus 1.1.1., Tarsus 1. Tarsal organ placed slightly beyond than the midpoint of each tarsus. Superior claws similar with 5 teeth. Inferior claw smooth.

*Palp.*—Trichobothria, Tibia 1.2.2.1. Tarsus 1.1. Claw smooth.

*Epigynum.*—The form of the epigynum is shown in fig. 48. Two pairs of spermathecae, equal sized, bean shaped (fig. 49).

*Type.*—Holotype female. Waitakere Range, ex leaf litter, 8 February, 1949, R. R. Forster. Canterbury Museum.

## *Plectophanes* Bryant, 1935

1935. *Plectophanes* Bryant. *Rec.Cant.Mus.* **4**: 81.

Medium sized toxopids with elongate body form. Carapace constricted anteriorly and extending forward above the chelicerae; twice as long as wide. Eight eyes situated on the projecting portion of the carapace. AME on ventral surface. Posterior eyes much larger than anterior eyes. Clypeus narrow. Chelicerae short, stout, directed down, with prominent lateral boss. Two teeth on both pro- and retromargins. Labium much longer than wide. Sternum elongate, shield-like, almost twice as long as wide, terminating between coxae IV. Legs I-III prograde. Spines on femora, tibiae and metatarsi, none on tarsi. Pretarsus and pulvillus absent. Superior claws pectinate in single row, similar; inferior claws with two relatively long curved proximal teeth. Claw of pedipalp of female pectinate.

Type species *Plectophanes frontalis* Bryant 1935.

The striking form of the carapace, the elongate body and prograde legs immediately separate *Plectophanes* from the other known genera. *Plectophanes* has been found living in hollow twigs and small tunnels in rotten logs. The elongate body form and anteriorly-directed legs of these spiders gives them an appearance similar to *Matachia*, a cribellate spider which Marples (1962) has recently recorded living in a similar habitat. It is interesting to note that in *Matachia* the chelicerae are elongate and directed forward whereas in *Plectophanes* they remain vertical but are relatively shorter and stouter than in other Toxopids.

## *Plectophanes frontalis* Bryant, 1935

1935. *P. frontalis* Bryant. *Rec.Cant.Mus.* **4**: 82.
1946. *P. frontalis* Parrott. *Rec.Cant.Mus.* **5**(2): 56.

♀

*Measurements* in millimetres.
Total length: 8·65.
Cephalothorax: Length 4·32, Width 1·80.
Abdomen: Length 4·32, Width 1·80.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 1.98 | 1.08 | 1.89 | 1.89 | 0.64 | 7.48 |
| 2 | 2.07 | 1.08 | 1.71 | 1.80 | 0.75 | 7.41 |
| 3 | 1.71 | 0.81 | 1.26 | 1.29 | 0.72 | 5.79 |
| 4 | 2.07 | 1.08 | 1.71 | 1.35 | 0.63 | 6.84 |
| Palp | 0.99 | 0.45 | 0.54 | | 0.90 | 2.88 |

*Colour.*—Carapace uniform dark brown. Abdomen with dark brown reticulate markings on the dorsal surface which enclose white patches.

*Eyes.*—The eye region projects well beyond the clypeus. Ratio AME.ALE. PME.PLE=5.5.12.13. AME situated on the ventral surface of the eye region. AME separated from each other by 4/5 and from the PME by 7/5 of the diameter of an AME. ALE and PME subcontiguous. PME separated from PLE by 9/5 and from each other by a distance equal to 16/5 of the diameter of an AME. Quadrangle formed by posterior eyes wider behind than in front in ratio of 42.31 and longer than wide in front in ratio of 34.31.

*Carapace.*—Level in profile more than twice as long as wide, narrowing anteriorly to form a narrow projection over the chilecerae. Fovea distinct, longitudinal situated at two thirds of the length from the front.

*Chelicerae.*—Short and stout, directed vertically each with strong proximal lateral boss. Two strong teeth on both pro- and retromargins.

*Maxillae.*—Parallel with outer margins sloping slightly outwards so that maxillae are wider at tip where the width is equal to half of the length.

*Labium.*—Widest medially. Longer than wide in ratio of 9.5. Anterior margin straight.

*Sternum.*—Shield shape, broadly truncate anteriorly, longer than wide in ratio of 18.11. Terminated sharply between coxae IV.

*Legs.*—1.2.4.3. First leg with ventral pairs of spines arranged 2.2.2. on tibiae, 2.2.2.2. on metatarsi. Second leg with 2.2.2.2. on tibiae, 2.2.2.2.2.2. on metatarsi. Trichobothria distributed as follows: *First leg:* Tibia 1.1.1., Metatarsus 1.1.1.1., Tarsus 1.1.1.1. *Second leg:* Tibia 2.2.2.1.1.1., Metatarsus 1.1.1.1.1., Tarsus 1.1.1.1.1. *Third leg:* Tibia 2.2.2.1.1.1., Metatarsus 1.1.1.1., Tarsus 1.1.1.1.1. *Fourth leg:* Tibia 0, Metatarsus 0, Tarsus 1.1.1.1. Superior claws similar with 7 strong teeth. Inferior claw with two slender curved teeth at the base. Tarsal organ subdistal.

*Palp.*—Tibia with a single row of three trichobothria. Claw with three teeth.

*Abdomen.*—Almost 2½ times as long as wide, clothed with short barbed hairs. Colulus distinct. Form of epigynum as in fig. 52. Single pair of ovoid spermathecae as shown in fig. 53.

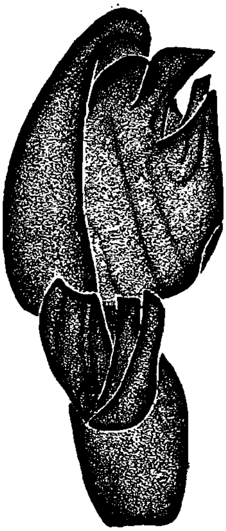
♂

*Measurements* in millimetres.
Total length: 6·68.
Cephalothorax: Length 3·78, Width 1·98.
Abdomen: Length 2·88, Width 1·44.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 2.52 | 1.20 | 2.16 | 2.16 | 0.90 | 8.94 |
| 2 | 2.62 | 1.08 | 1.91 | 2.16 | 0.98 | 8.75 |
| 3 | 1.98 | 0.90 | 1.44 | 1.62 | 0.93 | 6.87 |
| 4 | 2.16 | 0.98 | 1.80 | 1.62 | 0.83 | 7.39 |

The male is similar to the female and only the following characters need be described.

*Legs.*—1.2.4.3. First pair of legs with four pairs of spines on the ventral surface of tibia and three pairs on metatarsus. Second pair of legs with five pairs of spines on the ventral surfaces of both tibiae and metatarsi. Trichobothria dis-



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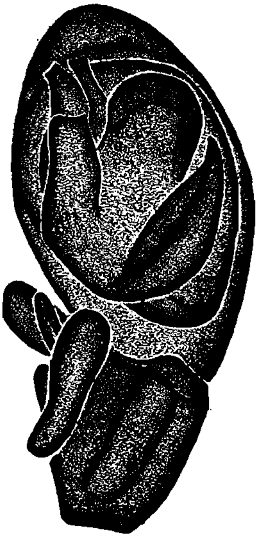

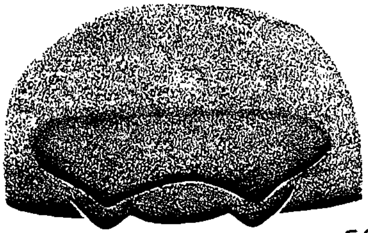

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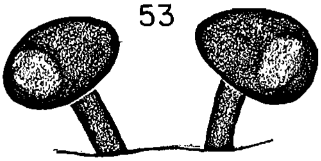

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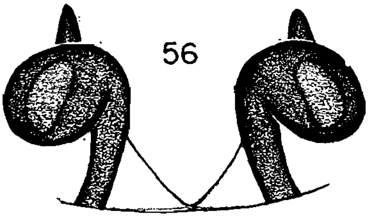

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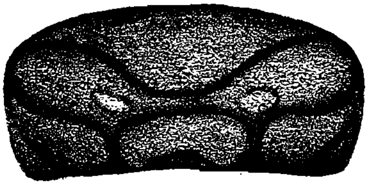

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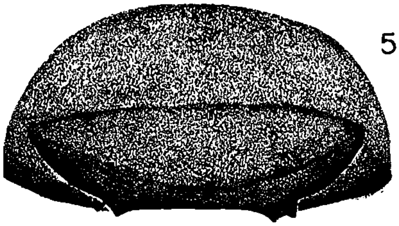


Figs. 50—53. *Plectophanes frontalis* (Bryant). Figs. 50, 51 Male palp. Fig. 52 Epigynum. Fig. 53 Internal genitalia. Figs. 54—56 *Plectophanes pilgrimi* n.sp. Fig. 54 Epigynum. Fig. 55 Epigynum raised. Fig. 56 Internal genitalia.

tributed as follows: *First leg:* Tibia 1.1.1.1.1., Metatarsus 1.1.1.1., Tarsus 1.1.1.1.1. *Second leg:* Tibia 2.2.2.1.1., Metatarsus 1.1.1.1.1., Tarsus 1.1.1.1. *Third and Fourth legs:* Tibia 2.2.2.1., Metatarsus 1.1.1.1., Tarsus 1.1.1.1. Superior claws similar with 9 teeth. Inferior claw with two curved teeth as in female.

*Palp.*—The form of the palp is shown in figs. 50, 51.

*Type.*—Holotype female. Waikanae, 19 January, 1923, G. Archey, Canterbury Museum (seen). Paratypes, two immature females, Wellington, 3 August, 1922, Museum of Comparative Zoology, Harvard University (not examined).

*Records.*—Near Woodville, Hawkes Bay, August, 1959, Clare Butcher (male).

## **Plectophanes pilgrimi** n.sp.

♀

*Measurements* in millimetres.
Total length: 10·10.
Cephalothorax: Length 5·04, Width 2·26.
Abdomen: Length 5·04, Width 2·92.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 3.06 | 1.44 | 2.16 | 2.43 | .082 | 9.91 |
| 2 | 2.62 | 1.26 | 2.05 | 2.05 | 0.83 | 9.81 |
| 3 | 1.98 | 1.08 | 1.62 | 1.54 | 0.72 | 6.94 |
| 4 | 2.34 | 1.26 | 1.98 | 1.62 | 0.72 | 7.92 |
| Palp | 1.26 | 0.63 | 0.63 |  | 1.08 | 3.60 |

*Colour.*—Carapace uniform brown. Abdomen creamy white with a median longitudinal band on the dorsal surface which expands posteriorly to form four indefinite chevrons.

*Carapace.*—As in *frontalis.*

*Eyes.*—5.6.18.17. AME separated from each other by 6/5 and from PME by 7/5 of the diameter of an AME. PME separated from ALE by 9/5, from the PLE by 11/5 and from each other by 10/5 of the diameter of an AME. PLE separated from each other by a distance equal to 7 times the diameter of an AME. Quadrangle formed by posterior eyes as long as wide in the front but wider behind than in front in the ratio of 7.5.

Chelicerae, maxillae, labium and sternum typical.

*Legs.*—1.2.4.3. Spines as in *frontalis.* Trichobothria distributed as follows: *First leg:* Tibia 2.2.2.1., Metatarsus 1 at two thirds of length of segment, Tarsus 1.1.1.1.1. *Second leg:* Tibia 2.2.2.1.1., Metatarsus 1.1.1.1.1., Tarsus 1.1.1.1.1. *Third leg:* Tibia 2.2.2.2.1.1., Metatarsus 1.1.1.1.1., Tarsus 1.1.1.1.1.1. F*ourth leg:* Tibia 2.2.2.2.1.1. Metatarsus 1.1.1.1.1., Tarsus 1.1.1.1. Superior claws similar, with five teeth. Inferior claw with two slender curved teeth. Tarsal organ not seen.

*Palp.*—Trichobothria present on tibia 2.2.2.2., and tarsus 1.1.1. Claw with four strong teeth.

*Abdomen.*—Much longer than wide. Colulus distinct. Epigynum as in figs. 54, 55. Fig. 58 shows the epigynum lifted and viewed from the end. A single pair of spermathecae as in *frontalis* (fig. 56).

*Type.*—Holotype female, Reserve Bush, Cass, Canterbury, November, 1957, R. Pilgrim, Canterbury Museum.

*Remarks.*—This species is closely related to *frontalis* but is much larger and differs in the arrangement of spines (5.3.) and trichobothria on the legs and in the form of the epigynum.

## **Plectophanes alta** n.sp.

♀

*Measurements* in millimetres.
Total length: 4·72.
Cephalothorax: Length 2·24, Width 1·08.
Abdomen: Length 2·46, Width 1·44.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 1.26 | 0.54 | 0.98 | 0.98 | 0.41 | 4.17 |
| 2 | 0.98 | 0.46 | 0.81 | 0.81 | 0.39 | 3.45 |
| 3 | 0.83 | 0.44 | 0.54 | 0.62 | 0.31 | 2.74 |
| 4 | 0.98 | 0.54 | 0.72 | 0.69 | 0.36 | 3.29 |
| Palp | 0.54 | 0.29 | .027 |  | 0.51 | 1.61 |

*Colour.*—Carapace uniform dark brown. Abdomen shaded with dark brown interspersed with pale spots. A row of five pairs of pale oblique bands down the median surface form five indistinct chevrons.

*Eyes.*—Ratio of AME.ALE.PME.PLE=3.6.12.10. AME separated from PME by 5/3 and from each other by 3/3 of the diameter of an AME. PME separated from ALE by 5/3, from PLE by 8/5 and from each other by 5/3 of the diameter of an AME. PLE separated from each other by distance equal to 34/3 of the diameter of an AME.

Chelicerae, maxillae, labium and sternum as in *frontalis.*

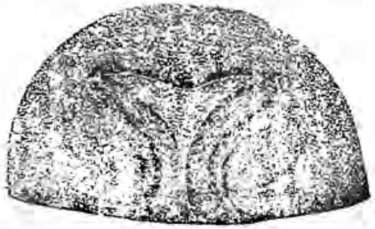
*Legs.*—1.2.4.3. Tibia and metatarsi of first and second pairs of legs with three pairs of spines on the ventral surfaces. Trichobothria distributed as follows: *First leg:* Tibia 2.2.2.1.1., Metatarsus 1.1.1.1., Tarsus 1.1. *Second leg:* Tibia 2.2.2.1.1., Metatarsus 1.1.1., Tarsus 1.1.1.1. *Third leg:* Tibia 2.2.1.1., Metatarsus 1.1., Tarsus 1.1.1. *Fourth leg:* Tibia 2.2.2.1.1., Metatarsus 1.1.1., Tarsus 1.1.1. Superior claws similar with 9 teeth. Inferior claw with single small tooth. Tarsal organ at 3/4 of the length of each tarsus.

*Palp.*—A single trichobothrium present on the median surface of the tibia. Claw with 3 teeth.

*Abdomen.*—Less than twice as long as wide. Epigynum as in fig. 57. Two pairs of rounded spermathecae present (fig. 58).

*Type.*—Holotype female. Thompson Sound, Fiordland, 2,800′ ex moss, 19 January, 1958, R. R. Forster. Paratype female, Rugged Burn Valley, West Te Anau, Fiordland, 18 December, 1953, G. Ramsay. Otago Museum.

*Remarks.*—This small species is related to *frontalis* and *pilgrimi* but the epigynum is quite distinctive as is the presence of two pairs of spermathecae.



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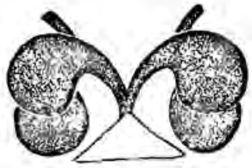

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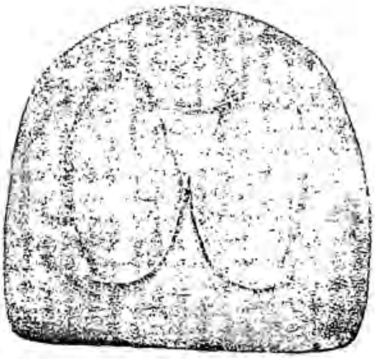

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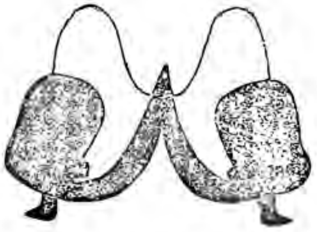

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Figs. 57—58. *Plectophanes alta* n.sp. Fig. 57 Epigynum. Fig. 58 Internal genitalia. Figs. 59—60 *Plectophanes archeyi* n.sp. Fig. 59 Epigynum. Fig. 60 Internal genitalia.

## **Plectophanes archeyi** n.sp.

♀

*Measurements* in millimetres.

Total length: 4·32.

Cephalothorax: Length 2·88, Width 1·53.

Abdomen: Length 3·06, Width 1·62.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 1.62 | 0.90 | 1.39 | 1.44 | 0.59 | 5.94 |
| 2 | 1.53 | 0.81 | 1.26 | 1.34 | 0.54 | 5.48 |
| 3 | 1.26 | 0.63 | 0.90 | 0.98 | 0.43 | 4.20 |
| 4 | 1.44 | 0.72 | 1.19 | 0.90 | 0.43 | 4.68 |
| Palp | 0.82 | 0.44 | 0.44 | | 0.72 | 2.42 |

*Colour.*—Carapace uniform dark brown. Abdomen pale yellow brown with scattered dark areas down the dorsal surface which form broken chevrons, separated by small white patches.

*Eyes.*—Ratio of AME.ALE.PME.PLE=6.4.15.11. AME separated from PME by 6/6 and from each other by 11/6 of the diameter of an AME. PME separated from ALE by 7/6, from the PLE and from each other by 10/6 of the diameter of an AME. The PLE are separated from each other by 35/6 of the diameter of an AME.

*Chelicerae.*—Vertical, stout, with well developed lateral boss. Two strong teeth on both pro- and retromargins.

*Maxillae.*—Parallel, widest distally where width is equal to half of length.

*Labium.*—Longer than wide in ratio of 9.5. Anterior margin straight.

*Sternum.*—In form of an elongate shield, longer than wide in ratio of 20.11.

*Legs.*—Ventral surfaces of tibiae and metatarsi of first two pairs of legs with three pairs of spines. Trichobothria distributed as follows: *First leg:* Tibia 1.1.1., Metatarsus 1.1.1., Tarsus 1.1.1.1. *Second leg:* Tibia 1.1.1., Metatarsus 1.1.1.1., Tarsus 1.1.1.1. *Third and Fourth legs:* Tibia 1.1.1., Metatarsus 1.1.1., Tarsus 1.1.1.1. Tarsal organ subdistal. Superior claws similar, with 8 teeth. Inferior claw with two long curved teeth.

*Palp.*—Tibia with a single row of 3 trichobothria. Claw with 3 teeth. Tarsal organ not seen.

*Abdomen.*—Slightly less than twice as long as wide. Colulus present. Epigynum as in fig. 59 with a triangular process extending up over an oval depressed region. Internal genitalia as in fig. 60.

*Type.*—Holotype female. Kennedy's Bush, Christchurch, 26 June, 1949, R. R Forster. Canterbury Museum.

### **Plectophanes hollowayi** n.sp.

♀

*Measurements* in millimetres.
Total length: 7·21.
Cephalothorax: Length 3·96, Width 1·73.
Abdomen: Length 3·24, Width 1·89.

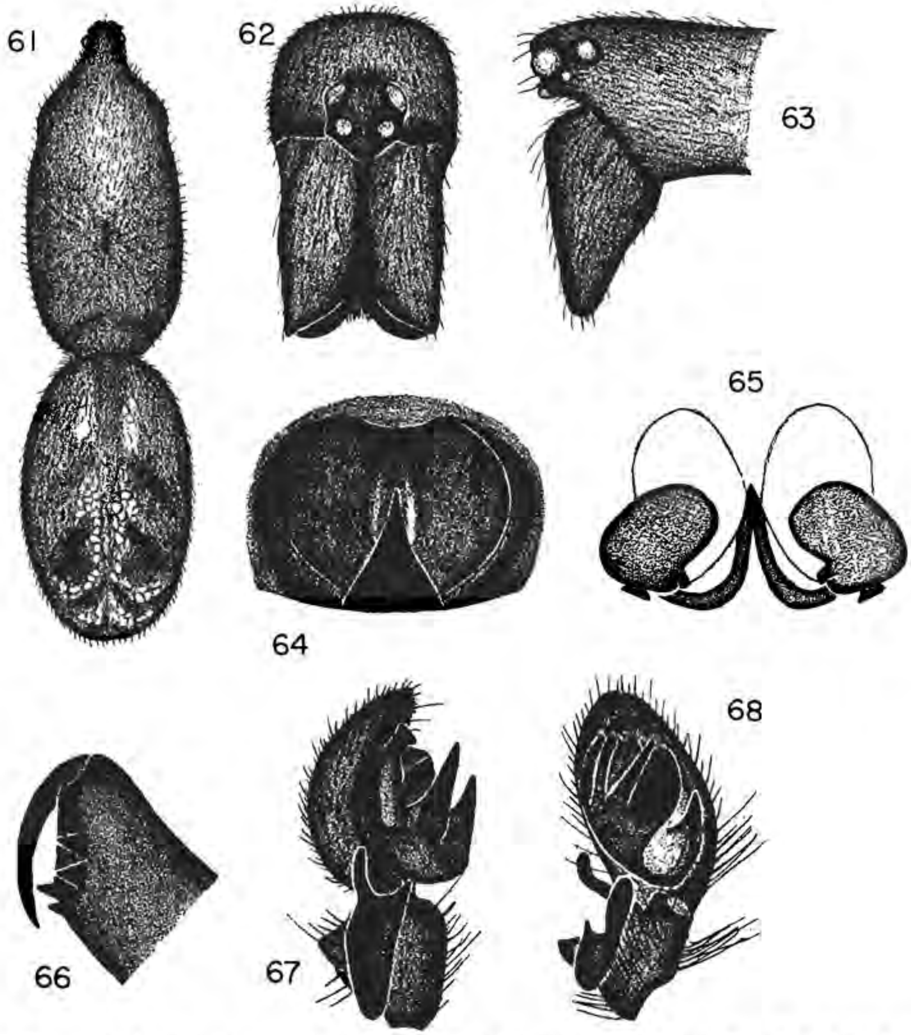
| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 1.91 | 1.08 | 1.62 | 1.62 | 0.72 | 6.95 |
| 2 | 1.80 | 0.96 | 1.44 | 1.62 | 0.63 | 6.45 |
| 3 | 1.51 | 0.84 | 1.08 | 1.26 | .054 | 5.23 |
| 4 | 1.80 | 0.92 | 1.39 | 1.35 | 0.54 | 6.00 |
| Palp | 0.98 | 0.45 | 0.54 | | 0.81 | 2.78 |

*Colour* (fig. 61).—Carapace uniform reddish brown. Abdomen cream with four faint brown chevrons on the dorsal surface and a number of white patches.

*Carapace.*—Slightly more than twice as wide, lateral margins almost straight and parallel. Flat in profile (figs. 62, 63).

*Eyes* (figs. 61-63).—Ratio of AME.ALE.PME.PLE=6.7.17.17. AME separated from PME by 5/6 and from each other by 5/5 of the diameter of an AME. PME separated from PLE by 12/6, from ALE by 4/6 and from each other by 15/6 of the diameter of an AME. PLE separated from each other by 7 times the diameter of an AME. Quadrangle formed by posterior eyes wider behind than in front in ratio of 76.49 and wider in front than long in the ratio of 49.46.

Chelicerae (fig. 66), maxillae, labium and sternum as in *archeyi*.



Figs. 61—68. *Plectophanes hollowayi* n.sp. Fig. 61 Dorsal view of body. Fig. 62 Cephalothorax and chelicerae from in front. Fig. 63 Lateral view of anterior portion of cephalothorax. Fig. 64 Epigynum. Fig. 65 Internal genitalia. Fig. 66 Chelicera of male. Fig. 67, 68 Male palp.

*Legs.*—1.2.4.3. Spines as in *archeyi.* Trichobothria distributed as follows: *First and Second legs:* Tibia 2.2.2.2.1.1., Metatarsus 1.1.1.1., Tarsus 1.1.1.1.1. *Third leg:* Tibia 2.2.2.2., Metatarsus 1.1.1., Tarsus 1.1.1. *Fourth leg:* Tibia 2.2.2.2.1.1., Metatarsus 1.1., Tarsus 1.1.1. Superior claws similar, with 8 teeth. Inferior claw with 2 slender curved teeth. Tarsal organ subdistal.

*Palp.*—Tibia with a double row of three trichobothria.

*Epigynum.*—As in fig. 64. Internal genitalia are illustrated in fig. 65.

♂

*Measurements* in millimetres.
Total length: 7·12.
Cephalothorax: Length 3·78, Width 1·89.
Abdomen: Length 3·24, Width 1·98.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 2.52 | 1.17 | 1.98 | 2.34 | 0.86 | 8.87 |
| 2 | 2.23 | 0.99 | 1.89 | 2.16 | 0.81 | 8.08 |
| 3 | 1.80 | 0.81 | 1.35 | 1.68 | 0.72 | 6.36 |
| 4 | 2.07 | 0.99 | 1.62 | 1.62 | 0.72 | 7.02 |

The male is similar in appearance to the female and only the following characters need description.

*Legs.*—The arrangement of the spines is similar to the female. Trichobothria are distributed as follows: *First leg:* Tibia 2.2.2.2., Metatarsus 1.1.1.1., Tarsus 1.1.1.1. *Second leg:* Tibia 2.2.2.2., Metatarsus 1.1.1.1.1., Tarsus 1.1.1.1. *Third leg:* Tibia 2.2.2.1.1., Metatarsus 1.1.1.1., Tarsus 1.1.1.1.1.1. *Fourth leg:* Tibia 2.2.2., Metatarsus 1.1.1., Tarsus 1.1.

*Palp* (figs. 67, 68).—The tibial process consists of a large stout concave plate which has two sharp apical projections.

*Types.*—Holotype female, allotype male, paratypes. Solomon's Is. South West Stewart Is., 25 January, 1955. R. K. Dell, B. A. Holloway, Dominion Museum, Wellington.

*Records.*—*P. hollowayi* is very closely related to *archeyi* from Christchurch but is separated by the form of the epigynum and the distribution of trichobothria on the legs.

## *Laestrygones* Urquhart, 1893

1893. *Laestrygones* Urquhart. *Trans.N.Z.Inst.* **26:** 217.
1909. *Stiphidion* Hogg. *Subantarctic Islands of N.Z.* p. 157.
1917. *Stiphidiellum* Dalmas. *Ann.Soc.ent.France* **86:** 325.

Small aboreal toxopid spiders. Carapace high, slightly longer than wide, not divided into a head and thoracic region but eyes spaced almost half of the length of the carapace, fovea wanting. Posterior eyes much larger than anterior eyes. Chelicerae with two teeth on both pro- and retromargins. Labium wider than long. Sternum shieldlike, longer than wide. Legs 4.1.2.3., spines on all segments except tarsi, superior claws similar, pectinate in a single row, inferior smooth. Pretarsus and pulvillus wanting. Tarsal claw of pedipalp of female.

Type species *Laestrygones proxima* (Urquhart) 1885.

It now seems that this genus is represented by a single species which has in the past been placed in an impressive range of genera of which *Stiphidiellum* is a direct synonym of *Laestrygones.* This species which will now be known as *Laestrygones proxima* (Urquhart) has been found in most parts of New Zealand, Chatham Islands, and the Auckland and Campbell Islands. It is commonly beaten from grass and shrubs. The female was redescribed by the present author recently (Forster, 1955) and the male will be redescribed in a forthcoming paper on the spiders of the Subantarctic Islands.

### *Cycloctenus* L.Koch, 1878

1878. *Cycloctenus.* Koch. *Die Arachn. Austral.* p. 988.

Relatively large laterigrade toxopid spiders. Thoracic region of carapace much wider than head region. Head region raised, rounded, thoracic region raised on each side of a deep longitudinal fovea. Eight eyes, posterior eyes subequal, much larger than anterior eyes. Chelicerae with lateral boss, two teeth on promargin, five on retromargin. Labium slightly longer than wide. Sternum shield shaped, as long as wide or wider than long, terminated between coxae IV. Legs with strong spines on femora on tibiae. Pretarsus and pulvillus lacking Superior claws pectinate in a single row, similar inferior smooth or with small teeth. Claw of pedipalp of female pectinate.

Type species *Cycloctenus flaviceps* L. Koch, 1878, Australia.

L. Koch established *Cycloctenus* for *C. flaviceps* from Australia (Nova Hollandia) and subsequently Urquhart (1890) described a second species from Australia (*C. abysinus*) while Rainbow (1920) recorded *C. vittatus* from Lord Howe Island. Of the three species recorded from New Zealand, *C. pulcher* Urquhart, *C. lepidus* Urquhart and *C. fugax* Goyen, the first two are both recorded from Wellington and are probably synonymous. *Cycloctenus* is well represented in New Zealand by at least fifteen species. One of these species is described below.

The spiders are only found in forest, under stones and logs during the daylight hours, or actually hunting on the forest floor and tree trunks during the night. They are extremely fast moving and difficult to catch. Dalmas (1917) recorded that while in New Zealand he found *Cycloctenus* on riverbeds and also mentioned that the spiders made a web similar to *Tegenaria* and could immerse themselves in the water by climbing down partially submerged branches. This behaviour fits closely that of aquatic Pisaurids found in many parts of New Zealand. Dalmas's statement that he found only immature specimens and also his lack of mention of aquatic Pisaurids would indicate that these statements were based on misidentified Pisaurids.

### **Cycloctenus westlandicus** n.sp.

♀

*Measurements* in millimetres.
Total length: 6·64.
Cephalothorax: Length 2·97, Width 2·51.
Abdomen: Length 3·82, Width 2·64.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 2.84 | 1.32 | 2.84 | 2.97 | 1.22 | 11.19 |
| 2 | 2.64 | 1.42 | 2.81 | 3.15 | 1.24 | 11.16 |
| 3 | 2.47 | 1.21 | 2.47 | 3.30 | 1.22 | 10.47 |
| 4 | 2.66 | 1.21 | 2.47 | 3.46 | 1.32 | 11.12 |
| Palp | 1.39 | 0.51 | 0.81 | | 1.24 | 3.95 |

*Colour* (fig. 69).—Cephalothorax pale yellow-brown with dark shading behind the lateral margins. Abdomen yellow brown with darker markings on the dorsal surface as shown in fig. 69.

*Carapace* (figs. 69, 70).—Head region clearly defined, higher than thorax. Fovea deep, longitudinal surface of thorax raised and rounded on each side. Width of thoracic region wider than head region in ratio of 11.6.

*Eyes* (figs. 69, 70).—From in front the anterior row is strongly recurved. Ratio of AME.ALE.PME.PLE=4.4.8.8. AME separated from PME by 6/4 and from each other by 4/4 of the diameter of an AME. ALE separated from both PME and PLE by 3/4 of the diameter of an AME. PME separated from each other by 6/4 and from PLE by 9/4 of the diameter of an AME. PLE separated from each other by 30/4 of the diameter of an AME. Quadrangle formed by the posterior eyes wider behind than in front in the ratio of 38.20 and longer than wide in the front in the ratio of 25.20. Height of clypeus slightly more than twice the width of an AME.

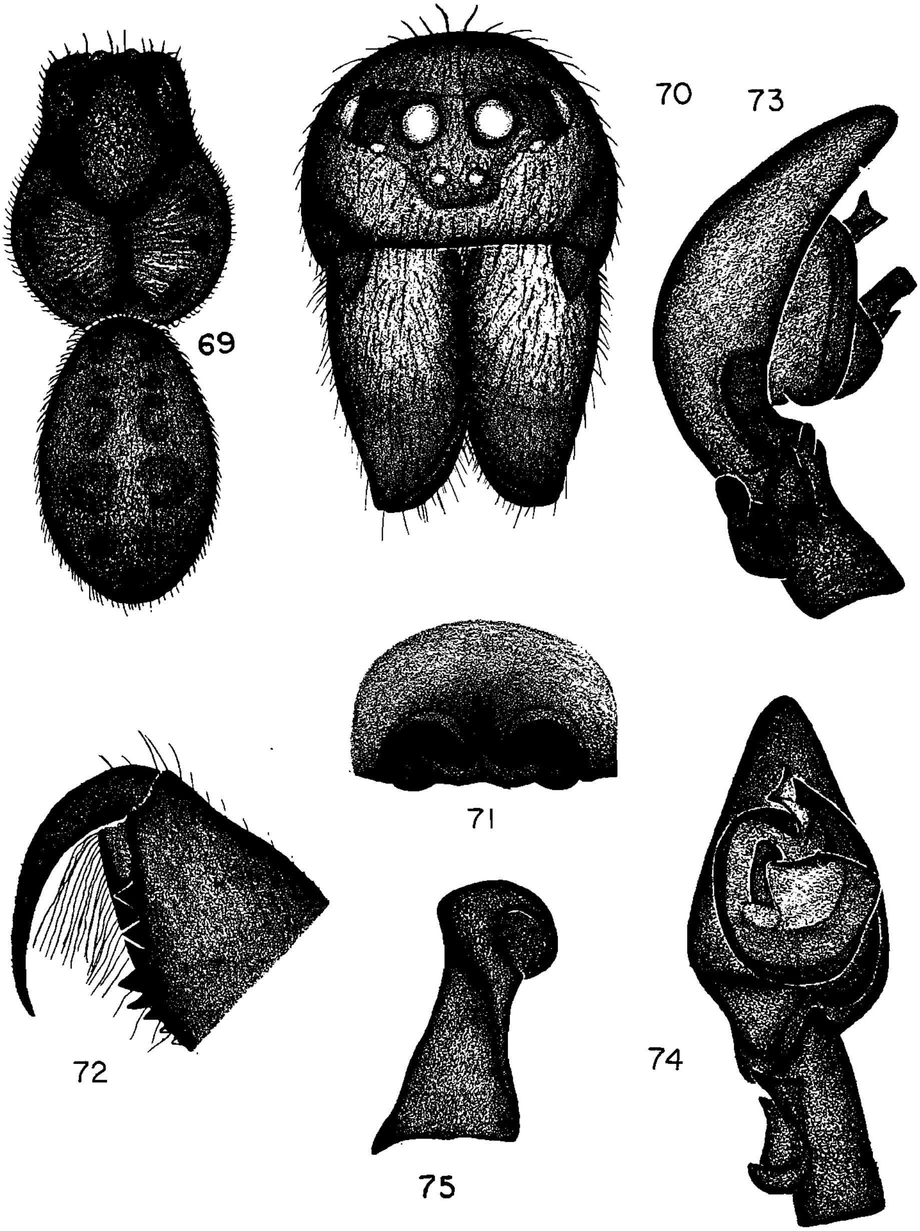
*Chelicerae* (fig. 72).—Strong, vertical, with well developed lateral boss. Two strong teeth on promargin, five teeth on retromargin of which the proximal two are small.

*Maxillae.*—Converging slightly over the labium. Widest distally where the width is equal to one half of the length.

*Labium.*—Longer than wide in the ratio of 8.7.

*Sternum.*—Scutiform, wider than long in ratio of 7.6. Terminating sharply behind between coxae IV.

*Legs.*—4.1.2.3. First and second pairs of legs with five pairs of spines on the ventral surfaces of tibiae and four pairs on metatarsi. Trichobothria distributed as follows: *First leg:* Tibia 0, Metatarsus 2.2.2.1., Tarsus 1.1.1.1.1.1.1., *Second leg:* Tibia 1.1. proximal, Metatarsus 1.1.2., Tarsus 0. *Third leg:* Tibia 0, Metatarsus 1.2.1.2.1., Tarsus 0. *Fourth leg:* Tibia 1.1., Metatarsus 1.1.1.1.1., Tarsus 1.1.1.1.1.1.1.1.1. Superior claws similar, with 7 teeth. Inferior claw with single, small proximal tooth. Tarsal organ not seen.



Figs. 69—75. *Cycloctenus westlandicus* n.sp. Fig. 69 Dorsal view of body. Fig. 70 Cephalothorax and chelicerae from in front. Fig. 71 Epigynum. Fig. 72 Male chelicera. Figs. 73, 74 Male palp. Fig. 75 Median apophysis of male palp.

*Palp.*—Tibia with 1.1. trichobothria on the proximo-dorsal surface of the tibia. Tarsal claw with 3 teeth.

*Abdomen.*—Closely clothed with short barbed hairs and fewer, more erect, smooth hairs. Colulus distinct. Epigynum as in fig. 71. Internal genitalia simple, consisting of a single pair of rounded spermathecae.

♂

*Measurements* in millimetres.
Total length: 5·83.
Cephalothorax: Length 2·97, Width 2·31.
Abdomen: Length 2·97, Width 1·89.

| Leg | Femur | Patella | Tibia | Metatarsus | Tarsus | Total |
|---|---|---|---|---|---|---|
| 1 | 2.31 | 0.83 | 2.97 | 3.21 | 1.32 | 10.64 |
| 2 | 2.29 | 0.99 | 2.85 | 3.21 | 1.26 | 10.60 |
| 3 | 2.31 | 0.99 | 1.98 | 3.30 | 1.24 | 9.82 |
| 4 | 2.46 | 1.06 | 2.97 | 3.30 | 1.61 | 11.40 |

Very similar to female, differing mainly in the proportions of the body and segments of the legs. The palp is shown in figs. 73, 74. The form of the median apophysis is shown in fig. 75. It is clear from a close study of the numerous, as yet, undescribed New Zealand species that this structure is diagnostic.

*Types.*—Holotype male, allotype female, paratypes. Westland, Fox Glacier, 1 September, 1951, M. Warren. Otago Museum.

*Remarks.*—This species is one of a series of species which will be described from New Zealand in a later paper. It is clearly separated from other described species by the form of the epigynum and the male palp.

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